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(working draft!)

Montana's Revised Water Quality Monitoring, Assessment, and Improvement Program

("HB546 and TMDLs in Practice")

An EQC Oversight Report to the Montana Legislature

Environmental Quality Council
State Capitol, Helena, MT 59620-1704
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CHAPTER 1. INTRODUCTION

The purpose of this report is two-fold. First, it is intended to provide general background information on Montana's revised (pursuant to passage of House Bill 546 in 1997) approach to water quality monitoring, assessment, and improvement. It is also intended to communicate to the Legislature the results of the Environmental Quality Council's oversight of these program revisions, including specific policy considerations that may arise during the 1999 Legislative session, next Interim, or further in the future.

In preparing to conduct legislative oversight of the DEQ program discussed herein, EQC Co-Chairs and staff met with the DEQ director and staff in July of 1997 to discuss what opportunities the planned oversight might provide for DEQ. Those discussions identified 6 aspects of program implementation that DEQ felt the EQC could assist them with over the 1997-98 Interim, one aspect being...

- assisting with public information and serving as a liaison with local governments (especially concerning cross-jurisdictional issues)

For this reason (and because of the Council's general mandate to communicate with the public and share information with others), EQC staff coordinated with DEQ staff to create a product whereby chapters 1 - 4 (plus appendices) of this report could be republished as a "primer" to the program.

For ease in using this document, subsequent chapters and their content are described below:

Chapter 2 -- This provides an overview of HB 546, what it changed, and a hypothetical example of how its implementation might occur "on-the-ground".

Chapter 3 -- This provides answers to questions that have been frequently asked of both DEQ staff, as well as Montana University system Water Center staff (who maintain a TMDL-related Web Site on the Internet).

Chapter 4 -- Four examples of water quality improvement efforts cover four different areas of Montana, as well as four different types of water resources, issues, and scales and stages of assessment and improvement efforts.

Chapter 5 -- This is the traditional oversight report type of information. The chapter includes: a description of the oversight process; the Council's general findings from its oversight; descriptions of specific policy considerations deemed of likely interest to the 1999 Legislature, agency staff, the interested general public, and future Legislators and members of the EQC; and any relevant Council recommendations emanating from the oversight activities.

Appendices -- These include some of the most relevant technical references for someone wishing a basic introduction to the DEQ's revised water quality monitoring, assessment, and improvement program.

We presume those wishing more detail on the information provided here will contact DEQ or EQC staff. Again, the information here is intended (1) as a primer, and (2) as a means for a Legislative committee (the EQC) to communicate its oversight findings with the full Legislature. Further information on EQC's oversight of HB546 implementation is provided in Chapter 5. Suggestions on how to make this document more helpful to the lay audience are encouraged and welcome.

CHAPTER 2. WHAT?! NOT ANOTHER ACRONYM?!

THE LEGISLATURE'S 1997 DIRECTIVE TO THE DEQ

During the 1997 Legislative Session, HB546 added yet another acronym to the Capitol parlance -- "TMDL", or "Total Maximum Daily Load." One of the major pieces of natural resource-related legislation passed by the 55th Legislature, HB546 provided more explicit direction to Montana's Department of Environmental Quality (DEQ) on how to implement a major directive of the federal Clean Water Act -- essentially, determine which Montana streams and lakes have water quality problems and take steps to clean them up. TMDLs are tools states can use to address these problems and they will likely be the topic of water quality discussions in Montana for years to come. But first, some background...

(Acronym Creek Illustration)
(to be provided)

TMDLs and the federal Clean Water Act (CWA)

As with many states' environmental laws, Montana water quality policy is heavily influenced by federal law and regulations. For example, before a state can issue permits for pollutant discharges into its rivers, it must develop a program that meets Environmental Protection Agency (EPA) requirements. The state is then "delegated" the responsibility for issuing pollutant discharge permits; if a program is not delegated, EPA retains the responsibility to issue the permits.

A primary purpose of the federal Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Though it "recognizes, preserves, and protects" states' responsibilities in water quality protection and resource planning and development, it assigns overall administration of the Act to the federal Environmental Protection Agency.

The Act requires states to adopt water quality standards (WQSs) for the protection of surface water quality. Water quality standards are set based upon the conditions necessary to support the "beneficial uses" assigned to a water body -- those uses the water should support (see Appendix A). For example, the beneficial uses assigned to the Bighorn River (above Hardin) are: drinking and food processing (after conventional water treatment); water contact recreation; support of cold-water fish species, other aquatic life, waterfowl, and furbearers; and agriculture and industry. The water quality standards set to support these uses address changes from natural conditions for such parameters as coliform, dissolved oxygen, pH, turbidity (lack of clarity), temperature, color, toxics, and other detrimental or harmful substances.

Changes in water quality from natural conditions typically emanate from either point-source (PS)

discharges or non-point source (NPS) discharges. Point-source discharges are from an identifiable entry point (e.g. sewage treatment plant pipe, canal, etc.); non-point sources are those that carry pollutants into waters from broad expanses of land (i.e. not a specific point). Inputs from agricultural operations and timber harvest activities are often non-point sources of water pollution. Point-source discharges are controlled through the state's discharge permit program. NPS discharges are addressed through encouraging voluntary use of certain practices determined to reduce water quality impairments. These are termed "best management practices," or BMPs. Examples of forestry BMPs include; crossing streams at right angles, sizing permanent culverts larger than 15 inches in diameter, and avoiding skidding over drainage areas.

Section 303(d) of the federal Clean Water Act and related regulations require states to assess the condition of the state's waters to determine if their quality is "impaired" (does not fully meet standards) or "threatened" (is likely to violate standards in the near future). The result of this review is often called the "303(d) list", which must be submitted to EPA every other year. Section 303(d) also requires states to prioritize and target water bodies on their list for TMDL development, and to develop TMDLs for impaired and threatened waters.

In theory, a TMDL is first a determination of which land use is contributing what to water quality conditions in an impaired (or threatened) segment, both point-sources and non-point sources. The calculations must also define and account for natural background water quality conditions. Once those calculations are made, all contributors are assigned an allowable share of the pollutant load that they can discharge. The assignments must incorporate necessary reductions in the parameters causing the segment to be classified as "impaired." Some dischargers may wish to "trade" portions of their allocations with other dischargers, which is allowed. **The "total maximum daily load" (TMDL), then, is the total loading of certain pollutants that the water body can accommodate without exceeding water quality standards -- it's the total above natural conditions that (theoretically) gets divvied up among dischargers to an impaired or threatened water body.**

A hypothetical (and extremely simplified!) example may be helpful...

> Acronym Creek, located near the pastoral (but growing) community of Abbreviation, Montana, has been assigned the same beneficial uses as the Bighorn (see preceding text), and water quality standards have been set accordingly. Land uses affecting water quality of Acronym Creek include cattle ranching, residential subdivisions on septic systems, a small industrial plant, and a small waste treatment plant. The town of Abbreviation draws its drinking water from Acronym Creek.
>
> According to Montana's 303(d) list, water quality in (hypothetical) Acronym Creek is "impaired" due to excess temperature, and "threatened" due to increasing turbidity. Contributors to increased temperature have been determined to be a combination of riverfront residents removing streamside vegetation to improve views, the industrial plant's discharge of its cooling process waters, and water withdrawals. In some locations, summertime water temperatures have exceeded 75F, which can be lethal to trout. Turbidity is beginning to affect the ability of fish to feed. High temperatures are contributing to increased algal and weed growth, requiring the Town's one maintenance worker to continually travel to the water plant to clean weeds and algae from the intake. (More on Acronym Creek later...)

The Montana Situation in 1996 -- Setting the Stage for HB546

So, where do we stand in Montana with regard to the mandate of Section 303(d) of the federal Clean

Water Act -- to assess and address impaired and threatened waters? Frankly, somewhat better on the "assessing" than the "addressing". Montana's 1996 303(d) list submitted to EPA included about 900 water bodies that had been determined to be impaired or threatened.

Despite the length of the list, as of 1996, only one comprehensive TMDL had been completed in Montana (though several were in progress). One complication was that the DEQ was uncertain whether they had sufficient state statutory authority to aggressively pursue TMDL development in Montana, and even if they did, they lacked the resources to do so. In 1992, seven water bodies had been targeted for TMDL development by 1994. In 1994, all seven were still on the targeted list.

And these issues were not unique to Montana. As of 1996, the EPA was being (or had been) sued in 16 different states based on allegations they had shirked their responsibilities under 303(d) to ensure states moved forward in water quality assessment and TMDL development. EPA was scrambling to defend itself, settle lawsuits, and make some moves nationally to provide greater assistance to states.

At the same time, long-time concerns were again voiced in Montana over whether so many Montana water bodies really deserved to be called "impaired" or "threatened"... What criteria were used to make that decision? Were there real "data" to support the conclusion or was it based on "windshield surveys"? Was the state on shaky ground legally if they continued to issue discharge permits on "impaired" streams when TMDLs hadn't yet been developed? Big questions.

The Montana DEQ had achieved more than many other states involved in TMDL-related lawsuits. After all, Montana had made comprehensive efforts on the "assessment" end. Other states hadn't gotten that far... And the DEQ had been making efforts at water quality improvement through means other than TMDL development for years.

So what happened...? In early fall of 1996, the Western Environmental Trade Association (WETA) sponsored a forum on these issues, and produced a related Position Paper on TMDL development in Montana. The paper (together with a briefing paper and alternatives analysis prepared by DEQ) provided a starting point for a DEQ-sponsored collaborative effort to draft a legislative proposal to address; issues surrounding the 303(d) "list" and what went on it, TMDL development, and all the decisions surrounding the priorities, method, and coordination involved in implementing this mandate of the Clean Water Act. Many hoped that successful TMDL legislation would illustrate that Montana was committed to moving forward on TMDL development. If so, maybe a lawsuit wouldn't be filed, or, if one were, the court might resolve a suit in a manner that retained state autonomy to develop TMDLs.

But on December 2, 1996, what some might have considered inevitable happened. EPA received notification of intent to sue over lack of TMDL progress in Montana. EPA was now in a similar defensive position in Montana, as it had been in Ohio, Kansas, Washington, New York, Georgia, Alaska, Minnesota, Idaho, and others.

The increased potential for a lawsuit added urgency to efforts to address TMDL issues in Montana -- if a suit were successful, EPA might be forced by the court to develop TMDLs for Montana; the state would lose authority and EPA had paltry resources to dedicate to such a mandate -- the result could be quite the top-down, heavily regulatory, federal solution to water quality issues in Montana. Not very desirable from a state autonomy point of view. ..... the lawsuit was filed against EPA on February 28th.

The DEQ collaborative effort succeeded in airing many of the concerns of the spectrum of parties that

participated; many compromises were made and issues addressed, but there was not "consensus" on the result before it had to move into the bill drafting stage at the Legislature in late January. Several revisions were incorporated during the drafting stage, and a few amendments during the hearing process, but the bill proceeded through the Legislature and the Governor only moderately changed from its introduced version. Other bills authorized approximately $2 million in former and new funding, as well as 9 new positions (FTEs), to dedicate to the efforts covered in HB546.

HB546 -- More than an Acronym...

HB546 was requested by Sen. Grosfield and sponsored by Rep. Tash. What did it do? In general:

- it defined the terms necessary to move forward in TMDL development and provided stronger legal authority to do so;
- it required the state to monitor state waters to accurately assess their quality and to develop TMDLs for impaired and threatened waters;
- it set procedures on how to determine whether "sufficient credible data" were used in developing the 303(d) list, required that waters lacking such data be removed from the list by October, 1999, and allowed persons to petition DEQ to add or remove a water body from the list;
- it required DEQ to consult with local watershed advisory groups and conservation districts in developing and revising the list and in developing TMDLs, set up a statewide advisory group to advise on prioritization, and set out criteria to be used in determining priorities for TMDL development;
- it specified that TMDL development must include quantified load allocations for point source discharges and development of voluntary Best Management Practices (BMPs) for non-point sources;
- it required monitoring of the success of TMDL strategies and reevaluation of the approach if water quality standards are not achieved on waters with TMDLs within 5 years;
- it provided a 1-year timeframe to determine how to develop necessary TMDLs, and a 10-year timeframe to do it.

Quite a charge. But, also a strong message that the Legislature was serious about addressing the TMDL issue in Montana.

So how might our hypothetical Acronym Creek be affected by HB546 implementation? Though extremely simplified (and very optimistic!), one scenario might be as follows:

> Due to growing concern over the water quality in Acronym Creek, local residents, representatives of the local conservation district, and some town officials had recently started meeting to discuss what might be done. With the passage of HB546, and because Montana's 303(d) list showed Acronym Creek as a high priority for TMDL development, DEQ staff contacted these folks and offered their assistance with finding solutions to the temperature and turbidity problems.
>
> State water quality staff traveled to Abbreviation, reviewed the condition of the Creek, took water quality samples, and met with residents and others regarding potential solutions. They calculated estimates of the share of the pollutant loading that might be attributable to certain land uses, and determined how much the total loading might have to be reduced to bring the Creek back into compliance with water quality standards.
>
> After several meetings among residents and state and local officials, it was determined that if half of the total length of the currently denuded stream banks could be revegetated, that temperature fluctuations might be reduced over a period of a few years to the point of compliance with standards. Since the vegetation might also hold more sediment in place, the turbidity should also be reduced, thereby resolving that problem automatically.

The owner of the ranching operation agreed that if plantings were of no cost to him, and he was successful in getting a grant to fence off his cattle from all but select portions of the Creek, that the revegetation could occur along bare portions of his creek frontage. Several residential property owners agreed to include their creek frontage in the revegetation project, too.

DEQ and the conservation district helped to develop an affordable planting list (mostly willows), and mapped the locations for revegetation. They documented the calculations and solution as Acronym Creek's TMDL, and the Creek was removed from the 303(d) list.

The following spring the Conservation District sponsored the willow slip cutting and planting and a Town potluck in the park afterwards. Monitoring over the following two years showed that temperature fluctuations had decreased and the water intake was less problematic. Kids were catching more fish in the Creek, too.

Implementation Challenges...

HB546 addressed many issues brewing in Montana in 1996. But, many still remain, and the bill itself created its own challenges. For example, the issue of how to determine when a water body meets or doesn't meet standards -- does one exceedence during a flood or drought event automatically qualify it as impaired? Also, petitions are coming in to delist waters. HB546 gives DEQ 60 days to answer a petition, and answers require analysis. And, if much of the emphasis is on a locally-driven, voluntary approach, is that consistent with the mandate to get the job done in 10 years? There will be increasing numbers of TMDLs to monitor and evaluate; lots of coordination which needs to happen; a statewide advisory group that needs to be staffed; a big state; a starting list of 900+ TMDLs that need to be done; multiple issues for each water body; and the lawsuit.

Many challenges loom. As one DEQ staffer put it, the greatest challenge in HB546 implementation is...

"finding efficient approaches to TMDL development that get the job done water quality-wise, achieve a high level of local buy-in, are politically correct, cost-effective, and minimally burdensome on landowners (financially, culturally, and otherwise)".

Yup; sounds pretty challenging.

Want to Know More?

If the acronyms and complexity have not put you off, there are a variety of ways to track the progress of this program.

- You can request to be added to DEQ's mailing list for their newsletter that addresses these programs.
- The Legislature's Environmental Quality Council (EQC) conducted legislative oversight of HB546 implementation and assisted with policy-related issues -- you can contact either EQC staff or EQC members regarding these efforts;
- You can locate and participate in TMDL-related efforts in your area -- there are currently TMDLs being developed for the Upper Clark Fork, Flathead Lake, Tenmile Creek (Helena area), and others. DEQ staff can provide you with a current list of TMDL efforts in the state;
- HB546 implementation is an on-going effort requiring continued funding to progress at a sustained level over the 10-year timeframe. Legislators can prepare to effectively review the progress of this program during upcoming Sessions.

Also, the remainder of this publication provides answers to frequently-asked questions on DEQ's water quality monitoring, assessment, and improvement efforts, as well as several case studies of such efforts, in progress, in various locations in Montana.

And for you AAs (Acronym Advocates)...

The entire foregoing can be summarized as follows:

> Section 303(d) of the CWA requires MT to assess SWs and list WQLs. TMDLs must be developed for WQLs, and EPA must ensure states make progress in doing so... Montana has a list, but not many TMDLs. Despite WETA holding a forum, DEQ developing a BP and AA and starting a bill draft, EPA got a NOI in December. The DEQ product went to LSD, and HB546 resulted, providing specific direction and authority to DEQ for TMDLs, the list, coordinating with the SAG and WAGs, developing and incorporating BMPs for NPS discharges and developing WAs and WLAs. They have a year to figure out how to do it, and 10 years to get it done. The EQC's WPC will be tracking DEQ's progress over the FY97-98 interim, including the use of the new FTEs, and can fill you in on the progress.

Just FYI...

CHAPTER 3. FREQUENTLY-ASKED QUESTIONS

(Note: The following is a preliminary draft of this chapter. It is being included in this version of the report to stimulate public comment on whether these questions are appropriate, and whether some should be dropped or others added. The questions are from discussions with DEQ outreach and program management staff, and questions asked of Montana University system Water Center staff (in response to the Center's "TMDL" web page, constructed in early 1998). EQC staff will continue to coordinate with DEQ staff on the tone and content of this section. Questions, comments, and suggestions are welcome.

WHAT'S THE 303(d) LIST?

Section 303(d) of the federal Clean Water Act (and related regulations) requires states to assess the condition of their waters to determine if their quality is "impaired" (does not fully meet standards) or "threatened" (is likely to violate standards in the near future). The result of this review is the "303(d) list", which must be submitted to EPA every other year. Section 303(d) also requires states to prioritize and target water bodies on their list for development of water quality improvement strategies (i.e. TMDLs), and to develop such strategies for impaired and threatened waters.

What's the history of the list?

The federal Clean Water Act passed in 1972. It wasn't until 1978 that EPA started requiring states to submit 303(d) lists and TMDLs, but they provided no guidance on how to do so. EPA lost its first court case on this topic in 1984, and in 1991 issued their first guidance document, developed jointly with states.

Due to interest in ensuring continued state control over water quality programs, Montana (DHES at the time) first submitted a 303(d) list to EPA in 19__; it included _____ waters considered to be either threatened or impaired. Data was from varied sources of varied intensity, including cursory visual surveys of some areas.

Montana submitted another 303(d) list in 199_ (including about __ waters), and others in 1994 (___ waters, 1996 (approximately 800 waters), and 1998 (again, approximately 800 waters). Passage of HB546 in 1997 required the DEQ to evaluate all waters on the list to determine if "sufficient credible data" was used in their listing. The review is to be complete by October of 1999; any waters not meeting the test will be removed from the list submitted to EPA in 2000.

How can I find out if a stream or lake is on the list and for what reason?

The 1998 version of Montana's 303(d) list is posted on the Montana University system Water Center website (http://water.montana.edu/docs/tmdl/303d/303dContents.htm). The list is also available from DEQ in paper format (contact DEQ's Monitoring, Assessment and Data Management Bureau -- 406-444-

4820). It is lengthy (over an inch thick in paper copy), and it includes DEQ's conclusions regarding what is causing the impairment and which land uses may be the major contributors.

Sample pages from the list (chosen to show the entries for three of the four examples provided in Chapter 4) are included in Appendix B of this report.

Some streams on the list go dry... How can there be water quality problems if there's no water?

(to be provided)

What's the difference between being listed as "impaired" vs. "threatened"?

"Impaired" water bodies do not fully meet water quality standards (i.e. do not fully support their designated uses), even though required technology-based controls and Best Management Practices may already be in place.

"Threatened" water bodies currently fully support their designated uses, but:

1. there is a new or proposed pollution source in the watershed that is not subject to the requirements of a discharge permit, the Montana water quality nondegradation law, or reasonable soil, land and water conservation practices, or
2. there is a documented declining trend in water quality.

Will one bad sample put a water on the list?

(to be provided; reference Appendix E.)

HOW IS A STREAM/LAKE REMOVED FROM (OR ADDED TO) THE 303(D) LIST?(incl. process and roles) (incl. "natural")

At least every five years, DEQ will, in consultation with the statewide TMDL Advisory Group, local conservation districts and watershed advisory groups, review and revise the 303(d) list, and priority rankings, of water bodies identified as threatened or impaired. The department will use all currently available data, whether collected by DEQ, other agencies, private entities, or individuals with an interest

in water quality protection. Before publishing a final list, a 60-day public comment period shall be provided for review of the draft list. The department will also make available, upon request, documentation of the reasoning behind the listing or delisting a particular water body, including, at a minimum, a description of the information, data, and methodology used. If the department removes a water body for a lack of sufficient credible data to support its listing, the department will monitor and assess that water body during the next field season or as soon as possible to determine whether it is a threatened or impaired water body.

On either a draft or final list, a person may request that DEQ add or remove a water body or reprioritize a water body. Information necessary to support the request must be provided to DEQ. The department shall review the data within 60 days from its submittal. If the department determines that the data are sufficient to grant the request, DEQ shall provide public notice of its intended action and allow 60 days for public comment. The department's decision to grant or deny a request to the Board of Environmental Review may be appealed by any person.

DEQ will also develop a database system to aid in the revision of the list. Data in the database will be made available to the public.

WHAT IS A TMDL? (incl. steps)

Technically, a TMDL is the total amount of a pollutant, per day, (including a margin of safety) that a water body may receive from any source (point, non-point, or natural background) without violating water quality standards.

Practically, the term refers to a plan or strategy to return a water body to compliance with water quality standards. It can be used interchangeably with the term "water quality improvement plan."

What is the process to develop a TMDL?

The steps DEQ encourages communities undertake to improve water quality include:

1. Getting Started
2. Assessment
3. Plan Development
4. Implementation
5. Monitoring

(to be expanded)

Can we do our own assessments?

(to be provided)

WHY SHOULD WE GET INVOLVED IN DEQ'S WATER QUALITY IMPROVEMENT PROCESS?

(to be provided)

How will involvement affect my livelihood?

What are the ties to other agency programs (i.e. endangered species and enforcement)?

Will what I agree to voluntarily become mandatory?

What about water rights?

House Bill 546 specifically states that water rights may not be affected by the TMDL process. Section 6 of HB546 546 reads:

> **Section 6. Nonimpairment of water rights.** Nothing in [this act] may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.

What about just waiting until the 1999 list changes are made...?

What if we don't participate at all?

AND IF WE WANT TO GET STARTED...?

(to be provided)

Who can help?

Where can we get funding for what we need to do?

What "strings" are attached?

QUESTIONS THAT COME UP ALONG THE WAY...

(to be provided)

What if there's no way to meet water quality standards?

What level of BMPs is sufficient?

How do we deal with flow alterations?

How long do we have to monitor?

WHAT'S HAPPENING STATEWIDE?

What is Montana doing now?

House Bill 546 created a framework for voluntary, cooperative, locally-crafted TMDL solutions. The bill also funded the Department of Environmental Quality (DEQ) $1.4 million (over two years) for TMDL development and implementation and established a statewide TMDL advisory group representing fourteen interest groups. DEQ will consult with this advisory group, along with local conservation districts and watershed groups, on ranking and prioritizing streams for TMDL development. Water quality plans already being implemented in Montana are being reviewed to see if they could qualify as TMDL plans.

DEQ's monitoring staff are reviewing water quality data for listed waters to see if sufficient credible data were used to list them. If not, the water bodies will be removed from the list and be reevaluated in coming years.

What happens next?

While the process has been in motion for a number of years, the future sequence envisioned by the law includes:

- further refinement and prioritization of the 303(d) list;
- calculation of the allowable amount of pollution from wastewater point sources for each water body on the 303(d) list;
- work with Conservation Districts and other watershed project managers to develop TMDLs for existing projects;
- development of water quality (TMDL) plans, which would include Best Management Practices, for each water body on the 303(d) list that is listed due to nonpoint source pollution monitoring; and
- analyze monitoring data and work with project managers across the state to ensure that the water quality plans meet their goals (i.e., water bodies meet water quality standards).

DEQ advocates a process that encourages local leadership in the development of water quality plans, offers as much individualized technical assistance as possible, customizes flexible solutions for each individual watershed, and delists water bodies when an approved plan is being implemented.

Which waters will have TMDLs prepared first?

Priorities will be set by DEQ with advice from local watershed groups and the TMDL Advisory Group.

House Bill 546 sets forth the following considerations for prioritization:

- the beneficial uses established for a water body;
- the extent that natural factors over which humans have no control are contributing to any impairment; the impacts to human health and aquatic life;
- the degree of public interest and support;
- the character of the pollutant and the severity and magnitude of water quality standard noncompliance;
- whether the water body is an important high-quality resource in an early stage of degradation;
- the size of the water body not achieving standards;
- immediate programmatic needs such as waste load allocations for new permits or permit renewals and load allocations for new non-point sources;
- court orders and decisions relating to water quality;
- state policies and priorities, including the protection and restoration of native fish when appropriate;
- the availability of technology and resources to correct the problems;
- whether actions or voluntary programs that are likely to correct the impairment of a particular water body are currently in place; and
- the recreational, economic, and aesthetic importance of a particular water body.

The water bodies in need of TMDL plans are listed in the water quality limited streams and lakes list (the 303(d) list). These streams and lakes were prioritized in 1996 and 1998 by DEQ for TMDL development as "high" (10 water bodies), "moderate" (18 water bodies) or "low" priority. The list will be further refined and prioritized by DEQ with advice from the TMDL Advisory Group, local conservation districts, local watershed groups, and citizens.

DEQ has targeted the following water bodies for TMDL development during the 1996-98 biennium:

Clark Fork River (Warm Springs Creek to the Flathead River confluence)
Flathead Lake
Swan Lake
Tenmile Creek

When will these TMDLs be created?

The effective date of House Bill 546 was May 5, 1997, which provides a time marker for certain provisions of the bill.

The following is a simplified timeline from House Bill 546:

May 5, 1998

DEQ will have a schedule for completing TMDLs within the next 10 years for water bodies in need of TMDLs before May 5, 1997, and a timeframe for developing TMDLs for water bodies that are listed after May 5, 1997.

October 1, 1999

DEQ will have developed a database to revise the list of water bodies needing TMDLs and assess

the validity and reliability of the data used in the listing and priority ranking process. If DEQ finds a lack of sufficient credible data to support the listing of a water body, DEQ will monitor and assess that water body during the next field season or as soon as possible.

(incorporate other aspects of schedule?)

May 5, 2007

DEQ shall have developed TMDLs for all water bodies on the water quality limited list of streams and lakes, as that list read on May 5, 1997. (This deadline will not apply to water bodies that have been added or removed from the list after May 5, 1997.)

Who's doing what?

TMDL development and implementation is a statewide effort for which the Montana Department of Environmental Quality (DEQ) is the lead state agency, but much work will be needed by other state agencies, local and federal agencies, local conservation districts, and local watershed groups. House Bill 546 (the legislation authorizing the TMDL process in Montana) established a TMDL Advisory Group representing fourteen interest groups to consult with DEQ, local conservation districts, watershed groups and citizens on the listing and prioritizing of water bodies for TMDL development. Also, the Water Policy Subcommittee of the legislative Environmental Quality Council has made HB546 implementation oversight their highest priority for the 1997-98 Interim.

The TMDL process provides many opportunities for public input, including:

Meetings

TMDL Advisory Group meetings are open to the public and listed on the Montana TMDL and Water Quality Meetings page.

The Montana Department of Environmental Quality (DEQ) shall also provide public notice of meetings of the statewide TMDL Advisory Group and consider public comments provided at the meetings.

Organizations

Local conservation districts and watershed groups will be involved in the creation and implementation of TMDL plans.

Public Review, Comments & Requests

DEQ will review and revise the list of water bodies identified as threatened or impaired at least every five years. During this review, DEQ will consult with local conservation districts and watershed advisory groups. Before publication of a revised list, 60 days for public comment will be provided by DEQ. DEQ will also make available the documentation (description of the data and the data collection methodologies) used to list or delist water bodies.

The TMDL process is an excellent opportunity for people to improve water quality and have a say about their future. Local people have unique insights into the issues surrounding water quality in their area. This local expertise is a necessity in carrying out an effective plan of action which identifies site-specific problems and targets them for water quality cleanup.

How is this work being funded?

The 1997 Legislature funded nine full time TMDL development positions -- two data management positions, four monitoring and assessment positions (all in the Monitoring and Data Management Bureau), and three TMDL outreach positions in the Resource Protection Planning Bureau. However, the Legislature did not provide new funding for local watershed groups and conservation districts to collect data and develop and implement TMDL plans. The 1997 Legislature directed DEQ to use nonpoint-source (319) funds to help local groups implement TMDLs.

Additional resources may be available through the following actions:

1. Finding common watershed management goals and better coordinating grants from state and federal agencies to maximize effectiveness.

   MT Dept. of Environmental Quality
   - Abandoned Mines Program
   - State Revolving Fund
   - Superfund
   - §319 Non-point Source Program

   MT Dept. of Natural Resources & Conservation
   - Renewable Resource Development Grant and Loan Program
   - Reclamation and Development Grant Program

   MT Dept. of Fish, Wildlife and Parks
   - River Restoration Program
   - Future Fisheries Program

   US Fish & Wildlife Service
   - Partners for Wildlife
   - Endangered Species Program

   Natural Resources Conservation Service
   - Environmental Quality Incentive Program
   - Conservation Reserve Program

2. By local Conservation Districts and watershed groups sponsoring and locally coordinating TMDLs.

3. Seeking grants from private foundations.

4. Seeking in-kind services from other agencies, industries and conservation groups.

Universities may play an important role in providing education, resources, and expertise.

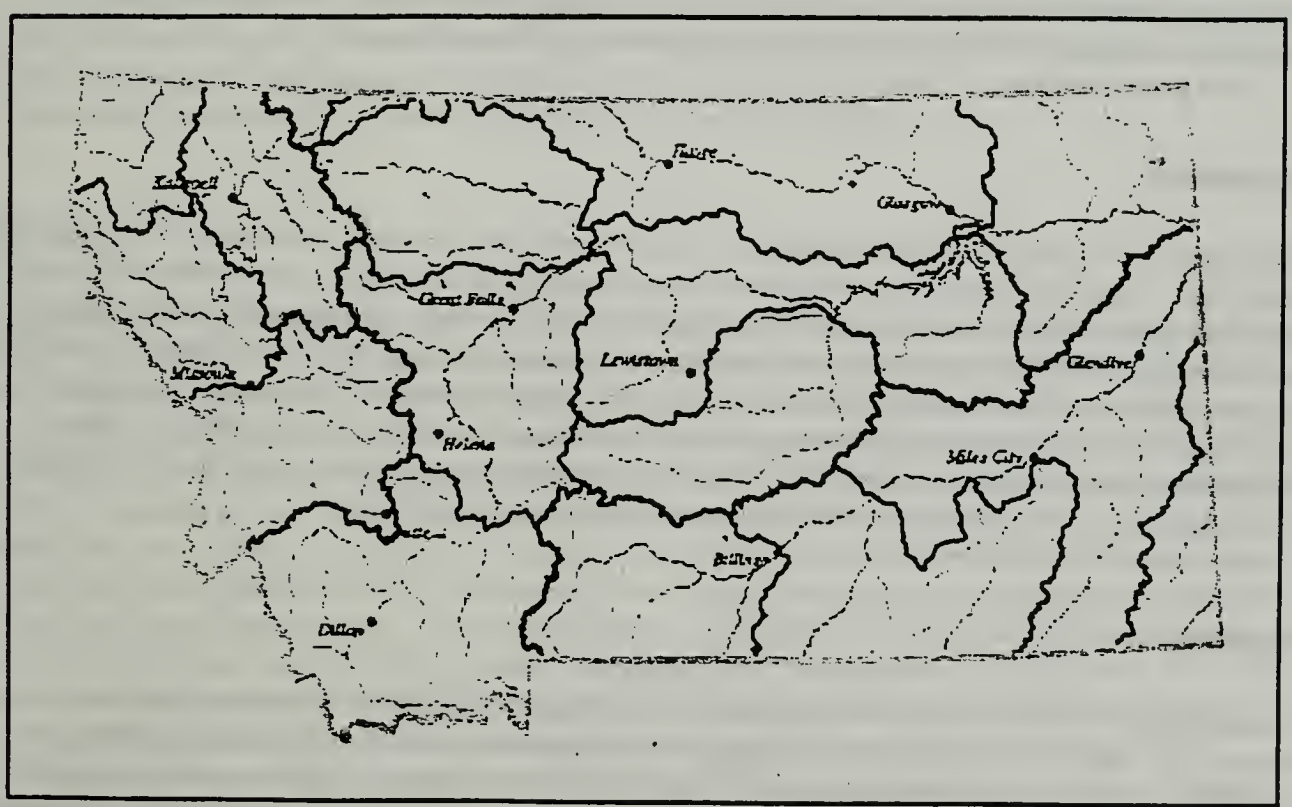
CHAPTER 4. FOUR EXAMPLES OF WATER QUALITY IMPROVEMENT EFFORTS IN MONTANA

The following provides four examples of water quality monitoring, assessment, and improvement projects in Montana. For geographic diversity, one example is provided from each of the DEQ's four TMDL regions. The examples exemplify diversity in resources as well, with one lake, one large river, one smaller river, and one intermittent/ephemeral stream. The issues vary widely, as do the scales of effort. We hope the examples are helpful in further understanding the considerations and procedures involved in Montana's revised process of addressing water quality concerns.

The locations of the four example watersheds are shown below. Their descriptions begin on the next page.

(Note: DEQ and EQC staff are still coordinating on the drafting of the case studies. They are in various stages of completion. Anyone wishing a copy of either of the examples may contact EQC staff for the latest working version. We apologize for the delay in getting this section completed for your review.)

(to be provided -- state map with regions outlined and named, and case study watersheds outlined and named)



DEEP CREEK (Upper Missouri Basin)

(Deep Creek Photo/Illustration)

About the Watershed...

Deep Creek is a major tributary of the Missouri River south of Townsend, Montana, in Broadwater County. The Creek provides spawning and rearing habitat for a blue ribbon rainbow trout and brown trout fishery in both the Missouri River and nearby Canyon Ferry Reservoir.

Getting Started

In addition to being an integral component of a heavily fished river system, Deep Creek is one of the few spawning streams available between Toston dam and Canyon Ferry Reservoir. Thus, findings of declining trout spawning habitat and stream bank stability in Deep Creek in 1991 raised local concern for the health of the area. Using input from various landowner and agency entities, Deep Creek became Montana's first non-point source Total Maximum Daily Load plan approved by EPA in 1996. While no formal watershed organization was involved in the TMDL process, the plan was prepared by DEQ and MSU from documentation by various local sources, including: Broadwater Conservation District, irrigation companies, MT FWP, NRCS, DEQ, MSU and U.S. Forest Service.

Assessment

The various public and private entities gathered data between 1991 and 1995 to evaluate the condition of Deep Creek. This information included aerial photos, stream bank inventory, water quality data, substrate cores, and data on fish and macroinvertebrate communities. The results of these assessments identified several points of concern. Aquatic life in Deep Creek is impaired by several types of habitat degradation. Riparian vegetation communities are degraded and dewatering is a problem. Bank stability is poor in areas, resulting in collapse, loss of meander, entrenchment, and high sediment transport and settling. Temperatures are too high for a healthy fishery, and water management may be limiting fish migration. Trout production is low, and macroinvertebrate communities are impacted.

Planning

A phased approach to restoration is implemented in the Deep Creek TMDL. Based on monitored responses to restoration in the watershed area, initial best estimates of pollutant loads are refined over time. Target values rather than quantified pollutant loads serve as indicators of successful treatment. Eight specific target indicators were set for Deep Creek: (1) decrease the slope of the regression between

discharge versus TSS by half in 4 out of 5 years (from .51 to .26), (2) find no significant difference in daily spring run-off TSS load between Deep Creek and the reference stream in 4 out of 5 years, (3) reduce by half the percentage of eroding banks over 10 years, (4) increase channel length by re-establishing 2,275 feet, (5) decrease substrate fines from 50% to 30% in spawning riffles over the next 5 years, (6) meet a target of 3,000 spawning female wild trout per year over the next 10 years, as observed through capturing at weir, (7) alter water temperature extremes as such that 73 F is not exceeded for more than 10 days per year , in one out of 5 years, and (8) address dewatering so that not less than 9cfs is set in the lower and upper reaches, and not less than 3cfs is set in the middle reach within 5 years.

DEQ targeted the most important sources of pollution. These included flow regulation and modification, irrigated crop production, natural sources, range land, removal of riparian vegetation and stream bank modification and destabilization. Pollutant source and targets were identified by reach along Deep Creek. Voluntary implementation of the plan was utilized and various sources of time and money were identified, including individual landowners, Broadwater County Conservation District, Broadwater-Missouri Water users Association, Broadwater Stream and Lake Committee, Montana Ditch Co., MSU Extension Service, Townsend School District, Department of Environmental Quality, Department of Natural Resources and Conservation, MT Fish Wildlife & Parks, USDA Farm Services Agency, USDA Natural Resource and Conservation Service, and USDA Forest Service. No specific landowners were assigned responsibility for the pollution in Deep Creek.

Implementation

Restoration activities up to this date have included both the removal of a fish barrier at the Montana Ditch crossing, and stabilization of over 14,000 feet of stream bank using riparian fencing. These activities have been specifically funded by Toston Dam Mitigation Funds, MT FWP and a private landowner. In addition, flow conditions have improved through the voluntary cooperation of ditch companies and the individual water users. Currently, the Natural Resource Conservation Service is assisting landowners with implementing management plans to guide utilization of riparian areas.

Monitoring

Because restoration in Deep Creek entails adaptive management, extensive monitoring is essential. A variety of monitoring tools are outlined in the plan. These tools cover aspects of riparian quality, water quality, channel morphology, substrate characteristics, and aquatic biota. Riparian quality will be monitored by sending out questionnaires to landowners addressing conditions and changes in fish habitat parameters, stream banks and the riparian vegetation community. The results of these questionnaires will be used to assess the effects of land management on riparian and stream conditions and trouble shoot problems such as excessive soil erosion. Photopoints will also be used to observe riparian changes over the years at specific reference points. Monitoring of water quality will occur by taking thermographs on each reach of Deep Creek to assess temperature changes. Chemistry tests and Wolman pebble counts will also be used to monitor water quality. Channel morphology will be monitored by taking transect observations. Substrate characteristics will be observed through substrate cores, and photo transects. Finally aquatic biota will be monitored by trapping, shocking and using artificial redds of the trout population, as well as continuing bioassessment protocol (RBP) to assess changes in habitat conditions and benthic macroinvertebrate communities compared to 1991 and 1992 baseline data.

Monitoring efforts are designated to be applied yearly for 5 to 10 years following treatment. While many of these efforts including aerial photos, water quality data, substrate cores and biological surveys will be provided by state and federal agencies, landowners will also be directly involved through questionnaires and surveys. MSU is involved in the report coordination, analysis and production of the TMDL plan through a graduate student project.

FREEZEOUT LAKE (LOWER MISSOURI BASIN)

About the Watershed...

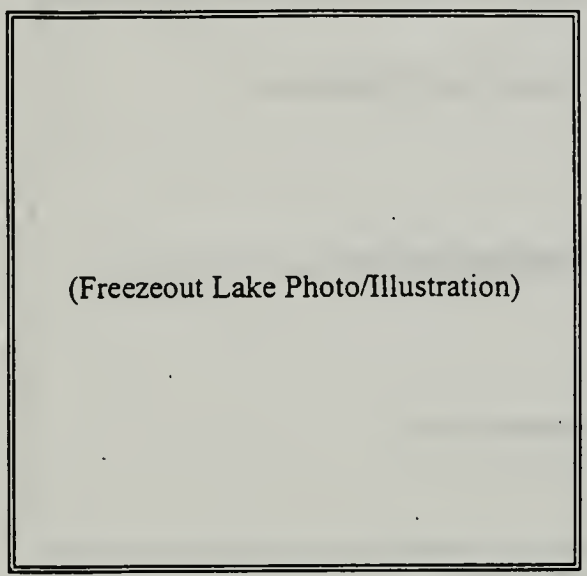
Getting Started

Assessment

Planning

Implementation

Monitoring



CEDAR CREEK (YELLOWSTONE BASIN)

About the Watershed...

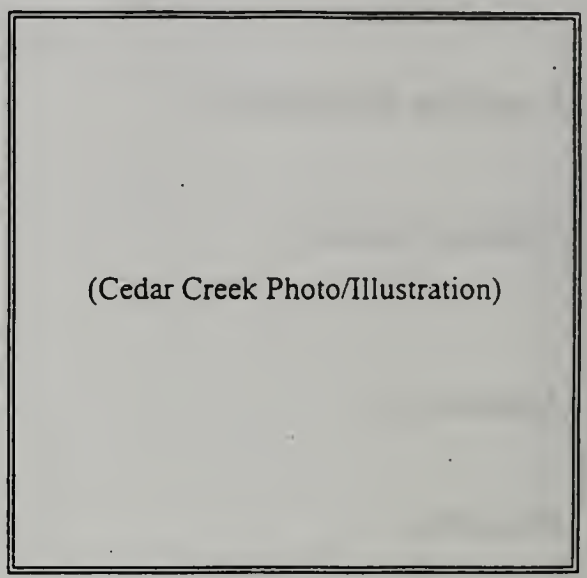
Getting Started

Assessment

Planning

Implementation

Monitoring



UPPER CLARK FORK (WEST SLOPE BASIN)

(Upper Clark Fork Photo/Illustration)

About the Watershed...

Getting Started

Assessment

Planning

Implementation

Monitoring

CHAPTER 5. EQC OVERSIGHT OF HB546 IMPLEMENTATION

(Intro about oversight process; what happened when, etc. -- to be provided)

GENERAL FINDINGS

General Subcommittee conclusions from their oversight of HB546 implementation are as follows:

1. During the 1997-98 Interim, DEQ focussed on hiring the staff authorized for program expansion, developing preliminary guidance documents regarding the decisions they need to make regarding the 303(d) list, preparing the statutorily-required schedule for completion of TMDLs, and initiating outreach to Conservation Districts, local groups and the public. They are now fully staffed and the program is getting up to speed. They have succeeded in converting some 319 and other projects into submittable TMDLs, and are working to convert more. Point-source TMDLs are continuing to be submitted to EPA via the MPDES permitting process.

2. Montana is a landmark state in how they have decided to address through state legislation the federal Clean Water Act requirements to monitor and assess waters, and develop TMDLs. Although other states have been less willing to move forward in TMDL development, Montana is trying to address the problem and ensure the state retains primacy over water programs.

3. There is concern regarding the need to fund the program and what sources are appropriate to do so. Since the mandate is from the federal Clean Water Act, there is legislator interest in encouraging federal funding for the program without disrupting traditional grant program uses of such funds.

4. The Subcommittee supports creative, voluntary solutions to water quality problems (e.g. the Deer Lodge land application of effluent to reduce nitrates in the Clark Fork River), and encourages DEQ to consider and bring to the next EQC any policy proposals to increase incentives for such creative solutions.

5. In general, the recommendations in this report are in the vein of going slowly, not rushing to make changes to the new statutes, and allowing the program to continue to develop.

6. (What else?)

7.

POLICY CONSIDERATIONS

(Note: The following summarizes 13 different policy-related topics. Each has background information, then a list of potential policy questions, some options the Subcommittee may still be considering, space for additional recommendations, and a list of persons EQC staff coordinated with in developing these writeups. An continuing option for any of the following topics is to eliminate it from the report, or to provide the background information with no recommendations, just as a "heads-up" to the Legislature... They can all be condensed, based upon the direction the Subcommittee/Council chooses to go with them...)

Effluent Trading

Background:

Overview. When DEQ staff were asked how the EQC could assist them while conducting its HB546 implementation oversight, one suggestion was to assist in developing a policy framework for effluent trading in Montana. The topic of effluent trading in Montana was discussed with Council members at two times, once in front of the full Council (January 1998), and once in front of the Water Policy Subcommittee (March 1998). The Council heard a presentation from Professor John Horwich on effluent trading at its January 9 meeting.

The U.S. Environmental Protection Agency (EPA) is encouraging watershed-based effluent trading on a voluntary basis. EPA issued a policy statement regarding effluent trading in watersheds in January 1996 and a *Draft Framework for Watershed-Based Trading* in May 1996. EPA's policy statement defines effluent trading as follows:

> . . . . a method to attain and/or maintain water quality standards, by allowing sources of pollution to achieve pollutant reductions through substituting a cost-effective and enforceable mix of controls on other sources of discharge.

According to EPA's draft framework, the term "trading" describes any agreement between parties contributing to water quality problems on the same water body that alters the allocation of pollutant reduction responsibilities among the sources.

Several types of trades are possible:

- Intra-plant trading.
- Pretreatment trading.
- Point/point source trading.
- Point/nonpoint source trading.
- Nonpoint/nonpoint source trading.

See Attachment A for a description of these types of trades.

Trades may be negotiated between two private parties or trading can occur within the context of an organized program. Trading can even occur within a plant. EPA's *Draft Framework* identifies eight principles to be followed in order to conduct effluent trading within the framework of federal laws, regulations, and policies.

1) Participants meet applicable Clean Water Act technology-based requirements.

2) Trades are consistent with water quality standards throughout a watershed, as well as anti-backsliding and other requirements of the Clean Water Act and other federal and state laws and local ordinances.

3) Trades are developed within a TMDL process or other equivalent analytical and management framework.

4) Trades occur in the context of current regulatory and enforcement mechanisms.

5) Trading boundaries generally coincide with watershed or water body segment boundaries and trading areas are of a manageable size.

6) Trading will generally add to existing ambient monitoring.

7) Careful consideration is given to the types of pollutants traded.

8) Stakeholder involvement and public participation are key components of trading.

According to EPA's *Draft Framework*, TMDLs provide a basis for successful trading for two reasons:

1) TMDLs allocate pollution control responsibilities among covered dischargers using a process that can be easily adapted to incorporate trades.

2) Data and analyses generated in TMDLs typically enable water quality managers to better understand and predict the effects of proposed trades.

Trades can be incorporated in TMDLs as they are being developed so that final allocations reflect the trades. If sources consider trading after a TMDL is already in place, states may revise allocations to reflect the proposed changes. EPA review of revisions to TMDLs is required. Revisions to National Pollutant Discharge Elimination System (NPDES) permits may also be required. There may be costs associated with these revisions. EPA's *Framework for Watershed-Based Trading* is expected to be complete in December, 1999.

Although EPA encourages trading within a TMDL framework, trading can take place without TMDLs. Some states argue that EPA has placed too much emphasis on TMDLs and that benefits can be realized from trading on water bodies that are not impaired. The Michigan Department of Environmental Quality concluded that Michigan needed to adopt administrative rules to provide clear authority for a statewide trading program that would extend beyond TMDLs.

DEQ staff note that, to date, there has been very little interest in effluent trading. In, the short term, the department intends to handle such requests on a case-by-case basis, following the draft federal guidance. As resources allow, DEQ would like to see state policy and guidance on pollution trading developed and disseminated so that local groups involved in TMDLs are aware of the trading option and understand the basics and the limitations. The department advocates flexibility in the TMDL development process, and feels pollution trading will certainly play a role in some future situations.

Examples. At the January 8 Council meeting, Tina Diebold, EPA, stated that water treatment plants in North Carolina pay into a state fund which supports best management practices at farms. This is an example of a point/nonpoint trade. The Tar-Pamlico Basin Nutrient Trading Program was established without a TMDL.

In another example, the Rahr Malting Co. in Minnesota traded limits on wastewater discharges into the Minnesota River for reductions in nonpoint source pollution upstream. This example is discussed in a recent article in *Pollution Engineering* (July 1997). There was concern regarding the ability to predict the amount of pollution reduction that can be achieved from altered land use practices. Thus, a margin of error and stepped up monitoring program were included as components of the trade. Rahr Malting Co.'s permit is more stringent than other current permits for discharges to the river in several respects. For example, the NPDES permit includes a phosphorous limit of 2 mg/l instead of the 3 mg/limit typically proposed by the Minnesota Pollution Control Agency. Conservative load reduction estimates were used to ensure that implemented practices have a measurable impact.

Rahr Malting Co. created a Minnesota River Corporate Sponsorship Program to address nonpoint source pollution upstream. Rahr established a $200,000 trust fund that will increase to $250,000 within five years. The trust fund pays for purchase of easements on sensitive agricultural lands, implementation of best management practices (BMPs), and construction or restoration of wetlands. Long-term contracts, perpetual easements and land purchases are used to make sure the BMPs stay in place.

In Montana, the draft proposed TMDL for the Clark Fork River (the Voluntary Nutrient Reduction Program) proposes to allow new dischargers to "trade" their proposed discharge by paying others to reduce. For example, they could pay for implementation of agricultural best management practices. Also, the Missoula wastewater treatment plant is looking for "credits" for hooking up to the system current residential and commercial users of septic systems, thereby reducing groundwater contribution of nutrients to the Bitterroot River.

Benefits and Concerns. Potential benefits of effluent or emissions trading identified in presentations, testimony and discussion at Council meetings or by reviewers of this document include:

- It is a cost-effective and efficient way to reduce water pollution.
- It should encourage research and development of more efficient and effective means of controlling emissions, since there is an economic incentive for those who can control emissions most cheaply.
- It can encourage innovations in addressing pollution problems.
- A framework can be established for emissions trading that results in environmental benefits. For example, the government could require a percentage reduction in emissions any time that a trade is made.
- It uses the marketplace to create incentives for accomplishing environmental goals.
- It allows growth to occur in a watershed while the water quality is improved or maintained.

Potential concerns regarding emissions or effluent trading raised in testimony and discussion include:

- It assumes that if one company can achieve pollution prevention and reduce its emissions, then another company should be able to take advantage of this situation and increase or maintain their pollution. There is no incentive for pollution prevention.

- Emissions trading does not account for localized concentrations of pollution. Persons living around one facility are subject to higher concentrations of pollutants than persons living around other facilities which are implementing pollution prevention.

- Concerns were raised as to the equity of shifting discharges to other places in the watershed without public participation in the decision-making process.

Nationwide Policy Issues. Most policy issues that have arisen relate to point/nonpoint trades. Many commentors on EPA's draft framework raised concerns with respect to the treatment of point/nonpoint trading in the draft framework. Some issues that have arisen concerning point/nonpoint trades include the following:

- Fairness. Point source dischargers have argued that all those who contribute to pollution should share in making reductions necessary to achieve water quality goals. Point source dischargers are concerned about being expected to pay the costs of nonpoint source control when nonpoint sources are not regulated. Point source dischargers have argued that trading should not result in more stringent compliance standards than would otherwise be required without trading.

- Effectiveness. Concerns have been raised about the effectiveness of nonpoint source pollution controls. Minnesota is using computer modeling to predict the load reductions that result from implementation of BMPs. Concerns have also been raised about differences in the timing, location and chemical characteristics of discharges from point sources versus nonpoint sources. For example, nonpoint source discharges may occur during certain weather events.

- Baseline. In order for trading to result in a benefit, nonpoint source controls that are "credited" toward a trade should result in reductions that would not have occurred in the absence of trading. Establishment of a baseline has been very controversial in Minnesota.

- Enforcement and Accountability. Some environmental organizations have argued that enforceable point source controls should not be traded for unenforceable nonpoint source controls. Point source dischargers are concerned about being held responsible for enforcement of nonpoint source controls. Concerns have been raised about who will pay the cost of any additional monitoring, inspection and enforcement required as a result of trading.

Most states do not have rules that address trading in a TMDL framework. Minnesota has developed a set of broad principles to guide trades.

Potential Policy Issue:

State law (Subsection 75-5-703 (2), MCA) permits DEQ to allow for effluent trading when establishing TMDLs. However, the state currently does not have specific policy or guidance regarding effluent trading as a component of TMDLs, or the DEQ's water quality programs in general. Is Montana ready to (and does it need to) develop such policy, and if so, what form should it take, and what should be incorporated?

Should it be in statute or should DEQ provide program guidance? Should it address the issues mentioned above? Others? What extent of the decisions should be set in policy/guidance, vs. what should be left to the discretion of negotiators on a case-by-case basis?

Trades could be addressed on a case-by-case basis in the context of TMDL development or modification. Information could be provided to participants about issues that have arisen at the federal level or in other states. Advantages of this approach include: it allows for maximum flexibility to develop creative and innovative solutions; it allows interested parties in a watershed to propose trades consistent with their values and watershed-specific concerns; and it focuses the energy of interested parties on TMDL development, not policy development.

Statewide principles or guidelines for trades could be developed by DEQ or established in state law. Advantages of this approach include: it provides an opportunity for all Montanans to consider policy issues and participate in decision-making on a statewide basis; it minimizes the need to "reinvent the wheel" in each watershed; and it prevents participants from wasting time on developing trades that are unacceptable and would not be approved by DEQ.

Options Still Being Considered by the Subcommittee:

- Track the issue next Interim. Request presentations from entities that are proposing trading (or specifically, point/nonpoint trading). Evaluate whether or not policy issues need to be addressed. Ask DEQ to notify EQC if there is an interest in trading outside of TMDLs.

Subcommittee/Council Recommendations:

1. If the next EQC chooses to revisit this issue, they could keep tabs on EPA's finalization of their guidance for trading (due 12/99) and their related demonstration projects, poll point source dischargers in Montana to determine their interest in trading, check back on related activities on the Clark Fork, and work with DEQ to provide and/or develop additional guidance (including examples of any additional trading that has been done in Montana watersheds).

Persons Coordinated with in the Development of this Summary:

Bob Raisch -- DEQ, Resource Protection Planning Bureau
*Gary Ingman -- DEQ, Data Management and Monitoring Bureau
John North -- DEQ, Chief Legal Counsel
Jan Sensibaugh, DEQ, Permitting and Compliance Division
*Bruce Zander -- EPA, Regional TMDL Coordinator
John Horwich -- Professor, University of Montana Law School
*Ruth Watkins -- Tri-State Implementation Council
John Youngberg -- Montana Farm Bureau/Statewide TMDL Advisory Group
Anne Hedges -- Montana Environmental Information Center
*Don Allen, Western Environmental Trade Association
*Patrick Heffernan, Montana Logging Association
David Gerard, Political Economy Research Center
*Mark Simonich -- DEQ

*Denotes persons from whom comments were received and incorporated.

Attachment A

Types of Effluent Trading

Point[1]/Point source trading. A point source arranges for another point source to undertake greater than required reductions in pollutant discharge in lieu of reducing its own level of pollutant discharge beyond the minimum technology-based discharge standards.

Intra-plant trading. A point source allocates pollutant discharges among its outfalls in such a way that the combined permitted discharge with trading is no greater than the combined permitted discharge without trading and discharge from each outfall complies with the requirements necessary to meet applicable water quality standards.

Pre-treatment trading. An indirect industrial source that discharges to a publicly owned treatment works (POTW) arranges for greater-than-required reductions in pollutant discharge by other indirect sources in lieu of upgrading its own pretreatment beyond the minimum technology-based discharge standards.

Point/nonpoint source trading. A point source arranges for control of pollutants from a nonpoint source to undertake greater-than-required pollutant reductions in lieu of upgrading its own treatment beyond the minimum technology-based discharge standards.

Nonpoint source/nonpoint source trading. A nonpoint source arranges for more cost-effective control of other nonpoint sources in lieu of installing or upgrading its own controls or implementation of pollution prevention practices.

Source: U.S. Environmental Protection Agency *(Draft Framework for Watershed-Based Trading*, May 1996).

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[1]Point sources of pollution are those from a discrete source (e.g., a pipe or a ditch). Nonpoint sources of pollution are typically from runoff collecting pollutants from broad areas. Examples of common nonpoint sources include agriculture, forestry, urban areas, and construction.

Definition of Threatened

Background: Concerns have been raised with the Statewide TMDL Advisory Group (STAG) about the definition of *threatened* in HB 546. The new definition will affect development of Montana's Clean Water Act Section 303(d) list for the year 2000. DEQ staff note that although the new definition has not yet been applied to the entire 303(d) list, they are applying it in reviews of petitions to delist water bodies (e.g. Rock and Libby Creeks and the East Boulder River -- currently listed as *threatened* under the former (EPA) definition).

HB 546 defined *threatened* as follows:

> "Threatened water body" means a water body or stream segment for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:
> (a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or
> (b) documented adverse pollution trends. (75-5-103, MCA)

This definition establishes a higher threshold than DEQ has used in the past for listing a water body as *threatened.* It also differs from the definition used in guidance developed by EPA.

EPA guidance instructs states to use the definition of *threatened* in the *Guidelines for Preparation of the 1996 State Water Quality Assessments (305 (b) Reports)* (May 1995) in the development of 303 (d) lists.

> A water body is fully supporting but threatened for a particular designated use when it fully supports that use now but may not in the future unless pollution prevention or control action is taken because of anticipated sources or trends.

The guidance document goes on to say:

> States should use this category to describe waters for which actual monitoring or evaluative data indicate an apparent declining water quality trend (i.e., water quality conditions have deteriorated, compared to earlier assessments, but the waters still support uses). States may also choose to include waters for which monitoring or evaluative data indicate potential water quality problems requiring additional data or verification.

Other states in EPA's Region 8 generally use EPA's definition.

According to EPA, adverse trends can be documented with monitoring data or by modeling. DEQ staff believe that they would also use either monitoring data or modeling to document adverse trends. Unless DEQ's approach changes, a water body would be considered *threatened* under EPA's definition and Montana's definition if there are documented adverse pollution trends.

The primary difference between EPA and Montana is the treatment of water bodies that do not have documented adverse pollution trends, but for which there are proposed sources of pollution. Under Montana's law, a water body would not be considered *threatened* if proposed sources could be controlled. If proposed sources are subject to "pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices," the water body would not be listed. Under EPA's guidance, the water body would be listed

even if the sources might be controlled. According to Bruce Zander, EPA Region 8, the significance of this difference probably depends on how DEQ interprets "reasonable land, soil and water conservation practices" (see definition in ARM 17.30.602(21), or refer to "BMP" section of this document).

Furthermore, DEQ staff believe that the level of data required by Montana law in order to designate a water body as *threatened* is higher than EPA requires. The EPA guidance is vague on this point.

DEQ must complete its review of water bodies for the year 2000 list by October, 1999. In the past, DEQ listed streams as threatened if a new source of pollution was proposed, whether or not the source would be subjected to pollution controls or reasonable, land, soil and water conservation practices. As a result, DEQ staff suspect that many water bodies that are currently considered *threatened* may receive another designation for the year 2000 list. The actual effect of the change in definition will not be known until DEQ reviews available data. Water bodies that were previously designated *threatened* may be designated *fully supporting, partially supporting* or *not supporting*. When water bodies are removed from the list because there is a lack of sufficient credible data, the law (75-5-702 (6), MCA) requires DEQ to monitor and assess that water body as soon as possible.

DEQ staff note that despite the differences between the federal and state definition, the department has the option of monitoring and reassessing any water body that fails to meet the new state definition. Where these waters also fail to pass the "sufficient credible data test", the department is required to conduct such monitoring. New monitoring information in conjunction with existing data could be used to establish whether or not an adverse pollution trend exists for the water body, or, at a minimum, would establish the basis for future trends evaluations. Assurance of the availability of monitoring data to conclusively establish water body status, and the presence or absence of adverse pollution trends, should alleviate possible concerns over differences between the two definitions.

On a technical note, DEQ staff comment that the *threatened* definition may contain unnecessary and/or inappropriate wording, since it suggests that "...calculated increases in loads..." are a prerequisite for a threatened designation. They note that a considerable percentage of the state's water quality impairment problems (as reflected on the current impaired waters list) are not conducive to loading measurements. Examples include stream habitat degradation, deposited sediment, elevated water temperatures, and stream flow alterations. Such alterations may threaten or impair water quality, but are not measurable through loading calculations. In fact, the wording seems to be redundant because subsection (b) of the definition already requires a test of "documented adverse pollution trends."

Concerns have been raised about the implications for funding watershed activities with federal or state grant funds. There is a trend toward allocating federal funds to give some preference to *impaired* streams. This preference can apply not only to EPA funds, but to U.S. Department of Agriculture funds administered by the Natural Resources Conservation Service (NRCS) (e.g., EQIP) as well. The EQIP program provides grants to farmers and ranchers for implementation of conservation practices. Criteria for awarding grants are established at the state level with the advice of a Technical Advisory Committee. Currently, there is a criterion in the ranking system that gives preference to impaired streams. According to NRCS staff, the impact of this criterion is minimal.

According to DEQ, under the President's Clean Water Action Plan, state and federal agencies are to compare their priorities and identify a list of watersheds that are high priority for all or most of the agencies. The agencies are then directed to develop a unified watershed assessment for these watersheds. Although it may be intuitive that EQIP funding, and funding from other agencies, should be directed to

these watersheds, we do not read the guidance as mandatory. The department and many other agencies are proceeding slowly on the Clean Water Action Plan until more is known about he level of funding and associated requirements. Also, the watersheds identified for unified watershed assessments will not be identical to the priorities for any of the state and federal agencies. Each agency will need to evaluate the impacts of this dichotomy. For example, DEQ will need to consider how the unified watershed assessment priorities mesh with the TMDL priorities being developed by the department and the Statewide TMDL Advisory Group (STAG).

The 1997 Montana Legislature included a provision in the appropriations bill (HB2) that requires that EPA grant funds administered by DEQ (commonly known as section 319 funds) be used to address water quality impaired streams. This law addresses appropriations for the 1998-1999 biennium and DEQ will not reflect the new definition of *threatened* in the 303(d) list until the next biennium. Furthermore, DEQ has interpreted this language broadly and does not intend to require that streams remain on the list in order to be eligible for funds.

Potential Policy Issues:

- What impact might the changed definition have on waters listed and the ability to address water quality issues associated with waters that are only *threatened* at this point (via funding and other means)?

- The wording requiring a showing of calculated increases in loads may eliminate waters from being classified as *threatened*, based on their type of impairment (i.e. impairments that are not measurable in terms of "load"); it is unknown if this was intentional on the part of the Legislature, or not.

Options Still Being Considered by the Subcommittee:

- Recommend that the next EQC revisit HB546 implementation in its oversight efforts, including this topic (and potentially others). Recommend that the DEQ provide an update to the next EQC on the effect the new definition is having on 303(d) list entries and on the ability to obtain funding for, and to address, water quality issues on those water bodies likely to be removed from the list due to the new definition. Direct EQC staff to coordinate with DEQ and other states to assess the regional approach to this issue; if some agreement exists that is agreeable to Montana, suggestions could be made to EPA for changes or refinements to their guidance to states on this subject.

- Continue to track the issue this Interim. Identify and evaluate potential issues regarding litigation or funding as they arise. Request that DEQ report to the Water Policy Subcommittee on development of the 303 (d) list for the year 2000. Monitor new developments in federal grant programs and evaluate implications for funding. (Note: This option could likely only be implemented until mid-October.)

- Recommend the phrase "and calculated increases in loads" be stricken from the statute and document the rationale for doing so.

Subcommittee/Council Recommendations:

1. The Statewide TMDL Advisory Group and other interested parties should get together to determine if they feel the definition of "threatened" needs to be revised in statute. The STAG should report back to the Subcommittee or Council on the results of these consultations. (Note: The STAG does not plan to meet again until early November.)

Persons Coordinated with in the Development of this Summary:

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*Denotes persons from whom comments were received and incorporated.

Use Support/Classification

Background: When initial drafts of HB546 were being worked on by legislative staff, there was language in some places referring to a water body which was "water quality-limited", "threatened," "impaired", "failing to achieve compliance with applicable water quality standards," and/or "not meeting designated uses." To clarify, the terminology was narrowed to primary use of the terms "threatened" and "impaired", and these terms were defined in the bill and encoded in statute.

Combined references to "failing to achieve compliance with applicable water quality standards" and "not meeting designated uses" were eliminated under the rationale that water quality standards include meeting designated uses, although there may not be complete agreement in that interpretation. Some concern was raised early in the Interim that the elimination of the "designated use" language may have been a greater leap than should have been done, but EPA and DEQ staff continue to express confidence that the language in statute is sufficient.

According to DHES' (now DEQ) *Montana Water Quality 1994* (the 1994 "305(b) report"), Montana's waters were classified in 1955 according to their actual and anticipated uses. These can include drinking/food processing, water-contact recreation, support of fish and wildlife (including aquatic life), agriculture, and industry. The Montana Water Quality Act requires the Board of Environmental Review to adopt rules to protect the quality of the state's waters as well as present and future beneficial uses. Surface and groundwater use classification systems and water quality standards and criteria are defined in rule (ARMs Title 17, Chapter 20, Subchapters 6 and 10). Montana's numeric water quality standards are listed in DEQ *Water Quality Bulletin #7* (referred to as "WQB-7"). The Board may only downgrade (i.e. decide that a water body should support less uses than designated) a classification if it was mistakenly classified in the first place, but it may upgrade a classification.

DEQ has developed an approach for determining the relationship between standards exceedences and the level of support of beneficial use (see *Proposed Beneficial Use Support Decision Guidelines*, attached). There are some standards for which "exceedences" are relatively simple to ascertain. For these, a determination of "use support" (or lack of) may be relatively straightforward -- for other, it may be more difficult. For example, a level of arsenic in excess of 18 mg/l in a stream designated for current or potential use for drinking water is a clear exceedence of Montana's human health standard. According to DEQ's proposed *Guidelines*, any such exceedence in the last 3 years would cause them to find the water "non-supporting" of this use -- cause to be placed on the 303(d) list.

In contrast to the above relatively straightforward decision on use support are some decisions related to the support of aquatic life. As shown in DEQ's proposed *Guidelines*, a support decision related to this use can involve three categories of information; 1) chemical/bioassay, 2) biological, and 3) habitat. Within this category, there is also some variation in how straightforward the evaluations are, but many parameters (especially if there is a small set of data) refer to "reference conditions". "Reference conditions" are typically defined as the conditions found or expected in a water body of a similar character, possibly within the same "eco-region" (a large area of similar geology and plant communities). Reference streams can be defined on the ground (another portion of the same water body in better condition, or another water body nearby that is similar in character, but in better condition), or can be determined through what available literature says about what conditions can be expected without impairments. It is unknown how much "better" the reference water should be, whether it must be relatively "un-impacted" or whether any similar water that is fully supporting of its uses would qualify.

The "reference condition" topic may be a technical question that will be worked out through experimentation and evaluation. Or, there may be enough reliance on other parameters in the use support decision, that reference condition evaluations are supplemental to other analyses. However, the terminology in the decision criteria contain many terms that require scientific and decision-maker interpretation. An example is a portion of the "fully supporting" criterion for the biological component of aquatic use support, as follows:

> "Data indicate functioning, sustainable biological assemblages (assemblages include fish, macroinvertebrates and algae) none of which have been modified significantly beyond the natural range of the reference condition (>75% of reference condition)..."

DEQ notes they will work with FWP to further develop fishery guidelines. DEQ staff also note that Ohio has adopted water quality standards using a fish "index of biological integrity" (IBI). These fish IBIs have held up when challenged in court. DEQ staff have applied to EPA for grant funding to develop an IBI for warm water fisheries for tributaries of the Upper Missouri.

Potential Policy Issues:

- Does it matter (enough to suggest legislative changes?) that some are concerned that Montana's statute has a slight "disconnect" between water quality standards and "beneficial use support"? (DEQ staff note that it may be advantageous to recommend the Board clarify in rule that "...are suitable for" certain uses, means "...must be maintained suitable for..." certain uses.)

- There have been rumblings that one way to address the fact that there are so many waters not fully supporting their beneficial uses is to change the beneficial uses that are assigned to them (i.e. reclassify water bodies), which could require legislative action. Such a proposal could be quite controversial, depending upon its scale. (DEQ staff note that the department could propose to the Board that classifications be subdivided, or that biologically-based standards be developed.)

- Is the Legislature comfortable with the definitional progress being made so far by DEQ regarding "use support" decisions? Is there any guidance regarding some of the more difficult parameters and their proposals? (DEQ staff note that the department has been making good progress in developing guidance for water use support decision-making, coordinating with the Statewide TMDL Advisory Group in these efforts, and that this process should be allowed to continue. They add that legislators are invited to participate in this process, and the department welcomes input from all interested persons. The department urges the legislature to not consider legislative proposals for placing specific water use support criteria in statute at this time.)

- How will the bull trout listing under the federal Endangered Species Act affect beneficial use support determinations, especially considering that temperature needs for bull trout are traditionally assumed to be much lower than typical state-wide water quality standards? (Also related to interagency coordination topic...)

Subcommittee/Council Recommendations:

1. The Statewide TMDL Advisory Group and other interested parties should get together to determine if they feel there need to be statutory changes to address the above issues. The STAG

should report back to the Subcommittee or Council on the results of these consultations. (Note: The STAG does not plan to meet again until early November.)

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*Denotes persons from whom comments were received and incorporated.

"Sufficient Credible Data"

Background: HB546 required DEQ, by 10/1/99, to revise the 303(d) list (the list of "threatened" and "impaired waters") and "remove any water body that lacks sufficient credible data to support its listing" (75-5-702(6), MCA). The DEQ must revise the list using all "currently available data" from a wide variety of sources.

HB546 defined "sufficient credible data" as:

> ... chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards. (encoded as 75-5-103(23), MCA)

In carrying out this mandate, DEQ is soliciting water quality-related data from a variety of sources (for the "currently available" part), and will then evaluate that data and information already in their files, to determine whether the waters listed on the 1996 303(d) list meet the "sufficient credible data" test.

The DEQ has issued draft criteria for their assessment of whether data for a water body is "sufficiently credible" (see attached). The criteria is based upon recommendations from EPA that state incorporate relevant recommendations from a national, intergovernmental task force, now titled the National Water Quality Monitoring Council. DEQ's "data quality objectives" are summarized in the attached matrices, with their proposed minimum level of data highlighted via asterisks (**).

Related to this topic is the recent initiation of a "Montana Volunteer Water Monitoring Program", funded via a DEQ pass-through of EPA 319 funds. The funds are being used to initiate a statewide volunteer monitoring program, including a related NRIS website, and Montana Watercourse training sessions on volunteer water quality monitoring. As stated on the website, the purpose of the program is to:

> ... promote knowledge and stewardship of aquatic resources by teaching local citizen volunteers the skills needed to gather accurate, non-biased water quality information. Our intent is to build a program that incorporates "do-able" methods for volunteers and provides valuable information about Montana's surface water in a way that respects differing viewpoints. (http://nris.mt.gov/wis/volwatmon.htm)

An Extension representative involved in the Volunteer program notes that the program collects chemical (pH, temperature, dissolved oxygen), biological (macroinvertebrates, pollution tolerance index), and physical (estimated stream flow, visual survey, photo survey) data. He expressed concern that the statute states "physical, chemical OR biological" data, noting that a combination of these should be required. (DEQ's approach uses a combination, except where there is "overwhelming evidence" of impairment.) He notes the proposed approach addresses some of his concerns and suggests the approach be reviewed by additional professionals (e.g. a hydrologist, geologist, water quality specialist, etc.), land managers, and land owners.

DEQ staff note that they will emphasize the need to make sound technical decisions regarding water body status and will be considering all available sources of information (including that from volunteers). Volunteer monitoring information has been, and may continue to be, sufficient in some cases to assess the status of a water body. At a minimum, it can be used to supplement the available data record, or alert DEQ to problems they were not aware of.

Potential Policy Issues:

- What will these data quality objectives, if implemented as drafted, mean for listed (and potentially listable) waters? At this point, what proportion of the waters on the 1996 list would likely fail to meet the "sufficient credible data" test? 90%? 40%? 10%? What might these waters have in common (geography, size, type of impairment, etc.), if anything? From the potential effects (or otherwise), is the "bar" being set too low or too high?

- Varied groups have expressed interest in participating in collecting water quality data for assessing the waters in their areas, interacting with the DEQ 303(d) system to provide data that shows waters either deserve or don't deserve to be on the list, and conducting general water quality monitoring activities through schools, volunteer groups, etc. What do these data quality objectives mean for the ability of the public to participate in assessing and monitoring their waters? Is it likely volunteer monitoring could generate the full range of data necessary to list/delist a water? Will DEQ be providing information to Montana citizens on how to most effectively interact with their decision-making and data management system?

- Regarding the fledgling Volunteer Water Quality Monitoring program, "whose" program is it, and how long is the funding to last? What are the proposed products of the efforts under the grant, and can those products produce long-term results after grant expiration? Should something like this be made more official, or are such efforts best in the non-governmental sector, presuming they are desirable?

Options Still Being Considered by the Subcommittee:

- The Subcommittee could commend the Montana Watercourse training efforts related to voluntary water quality monitoring, and recommend enhanced coordination between the Volunteer Monitoring program and DEQ, so they could better benefit each other. If the Subcommittee chose to recommend that the next EQC revisit HB546 implementation, this could be a topic suggested for review.

- DEQ staff have noted that the timeframe in statute has limited the time they have had to conduct public review on their proposed criteria for sufficient credible data decisions. A commentor suggested additional technical review of these criteria. Although the criteria are heavily based upon nationally generated (and likely national reviewed) criteria, a public review period on the Subcommittee's *Oversight Report* could be used to provide feedback to DEQ on their work so far.

Subcommittee/Council Recommendations:

(to be determined, if any)

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*Denotes persons from whom comments were received and incorporated.

Septic Issues Raised in the Clark Fork VNRP (Surface Water/Ground Water Interactions)

Background:

Septics, Nitrogen, and the Clark Fork River. The Tri-State Implementation Council is spearheading a collaborative effort to develop a Voluntary Nutrient Reduction Program (VNRP) for the Upper Clark Fork River. It is likely the result of their effort will be submitted to the Environmental Protection Agency as a TMDL for nutrients for the Upper Clark Fork River. The VNRP has been signed (including DEQ), and the Council hopes to submit it to EPA by September.

At its Missoula meeting in November, 1997, the EQC Water Policy Subcommittee heard from local citizens and government officials regarding difficulties the Tri-State Council was having incorporating into the VNRP current and projected nutrient contributions from individual septic systems in the area. The immediate concern at the time was the expected need for the City to invest $20 million (Abe says 13?) in treatment plant upgrades, commitments on the part of other dischargers to reduce their inputs, yet the concern that other nutrient loadings (including those from septic systems) from outlying areas would prohibit the achievement of the nutrient target set in the VNRP. The Missoula City/County Health Department estimated that 6,780 septic systems in the Missoula urban area were contributing 257 kg/day of nitrates to the Clark Fork and Bitterroot rivers.

For the remainder of the Interim, the Subcommittee tracked the progress of the City, County, DEQ, and Tri-State Council in addressing this issue. In January, DEQ Subdivision staff provided an overview of septic regulation from the State perspective, and DEQ Monitoring staff discussed what was known about other waters in the state that have been documented to have "impairments" due to individual waste water systems. Subsequent Subcommittee meetings involved informal EQC staff updates on the progress the participants in the VNRP were making in addressing this concern.

As of July, 1998, the draft VNRP included the following language related to this issue (final wording is presumed to be the same, but will be confirmed upon receipt):

a) Recognize the connection between septic effluent/ground water/surface water in the Upper Clark Fork watershed and in the Missoula Valley;
b) Review state and local regulations with the goal of removing disincentives and/or offering incentives for connecting new and existing septic systems to public sewage collection and treatment facilities; and
c) Provide for the extension of sewer mains into high density unsewered areas as quickly as is feasible.
d) Maintain existing local regulations and modify state subdivision regulations as appropriate to encourage clustering and smaller lots in new subdivisions and provide for the economically feasible, orderly and timely connection of new subdivisions in the area onto public sewer;
e) Give credit to the Missoula wastewater treatment plant for meeting part of its nutrient reduction as additional connections of existing septic systems are made;
f) Encourage development of alternatives to municipal wastewater disposal to reduce nutrients from new development (such as land application, wetlands, and nutrient removal septic systems);
g) Connect 50 percent of the existing 6,780 septic systems in the Missoula urban area, resulting in an estimated reduction of approximately 130 kg/day nitrogen discharged to the Bitterroot and Clark Fork Rivers;
h) Continue connecting existing septic systems in the Missoula urban area to public sewage treatment and collection facilities at a rate approximately equivalent to the number of new septic system permits issued with the Missoula Valley Water Quality District; and
i) Reduce groundwater phosphorous loads to the Bitterroot and Clark Fork Rivers by 10%, or approximately 2 kg/day, and reduce surface water loads by 10% through such measures as best management practices for

urban/suburban development and agriculture; control of stormwater pollution sources; enforcement of existing local regulations such (as) the Aquifer Protection Ordinance, Riparian Regulations, and Lakeshore Regulations; and through connection of septic systems located in shallow groundwater areas near streams to public sewer.

j) Limit nitrate loading from septic systems outside the Missoula waste water treatment plant service area.

Efforts will also be made to work with and involve Ravalli County to assess groundwater/surface water contamination from increasing septics in the Bitterroot River valley and develop a strategy to reduce these impacts

This agreement was sufficient to satisfy the other VNRP participants that something would be done about groundwater contributions of nitrogen, so that the VNRP could move forward, but many hurdles lie ahead in implementing these measures.

DEQ's 1996 303(d) list showed 17 waters in Montana where DEQ had determined septics were at least partially contributing to water quality problems. Tri-State Council staff feel this is a big issue, and will become more widespread as others get into TMDL development.

Septic Regulation in General. A properly-sited and well-maintained septic system is relatively efficient at removing most pollutants from waste. They are not, however, very efficient at removing nitrogen, in some cases being able to remove as little as 7% of the nitrogen they receive.

In Montana, nitrogen is regulated via water quality standards, which limit nitrogen concentrations to 10 mg/l in surface and ground water (but the nondegradation requirements usually limit the maximum to 5 mg/l at the end of a groundwater mixing zone). Because nitrogen is also a component of the conditions which encourage algal growth in surface water (if sufficient phosphorous is present), it is also subject to the state's "general prohibitions" (ARM 17.30.637), which prohibit discharges that "produce undesirable aquatic life". In areas where ground water migrates to a surface water source with a minimum level of phosphorous already in the water, any increase in nitrogen concentrations in the receiving water could create excessive algal growth.

Regulatory approval of septic systems is based, partly, on the ability of waste to be diluted. Areas where the ground water moves relatively freely typically meet the requirements of the state's "non-degradation" provisions relatively easily. Geologically, the locations with water moving most freely are Montana's alluvial aquifers (river valley floors). Thus, DEQ staff note that the state's regulatory policy may, in effect, be encouraging development in the areas most likely to drain to nearby rivers.

Have septic proposals been denied due to these limitations? DEQ staff noted that it would be difficult to deny proposals for one or two septic systems that could not be shown to likely directly impact surface water nitrogen levels, if they met all the other requirements in state law. However, proposals for multiple systems in close proximity to surface water, in certain areas, can be more easily evaluated for potential for spurring algal growth. For example a subdivision proposal in Lincoln County was reviewed via an environmental impact statement (EIS) due to concerns related to nitrogen loading to an adjacent lake. The EIS analysis determined that the lake sufficiently "flushed itself" (i.e. had flow in and out of it) to enable it to be cleansed of enough nitrogen to alleviate concerns. Another lake with an adjacent proposed subdivision, however, does not appear to be adequately flushed with fresh water, and concerns may persist there.

DEQ is currently working with interested parties on determining whether existing regulatory mechanisms

can support the clustering that Missoula County is advocating. They have formed a "cluster team", comprised of representatives of DEQ and Missoula and Gallatin County agencies. The team's mission is to evaluate any disincentives to cluster development in existing state and local regulations or laws and make recommendations on statutory, regulatory, or non-regulatory changes that will encourage cluster development. Once the team has a draft set of recommendations, they will be submitted to other statewide organizations (e.g. League of Cities and Towns, Montana Association of Counties, and state realtors) for additional input. The ultimate goal will be to introduce any statutory changes to the 1999 Montana Legislature and make any regulatory or non-regulatory changes over the next two years.

In addition, DEQ is working on a bill draft, trying to address the multiple-jurisdiction (DEQ, local boards, and local Water Quality Districts) issue related to septic review (related to recent Supreme Court decision).

Potential Policy Issues:

- Are there sufficient authorities in state and local law to address groundwater/surface water nitrogen problems that are not being implemented (or could be implemented better), or are policy changes necessary to avoid continued and additional problems? Is this a problem that should be deliberated at the state level, or are these conditions varied enough and localized enough that problems should be addressed at the regional or local level (i.e. through local ordinances and/or TMDL development)?

- EQC's Growth Subcommittee has also heard concerns expressed about septic regulation and its influence on land use. This committee (as well as the Water Policy Subcommittee) has heard testimony that, in some areas, the current policy which generally requires a minimum lot size of 1 acre for use of an individual well and septic system is promoting sprawl, and reduces the likelihood that the resulting land uses could economically be served by sewer in the future. Are there options to solve the water quality problem that could assist in resolving land use/local service provision issues as well, without undue impacts to housing costs or personal property? At their August 4, 1998, meeting, the Subcommittee requested Ms. Vandenbosch provide to the EQC's Growth Subcommittee a copy of the 7/29/98 version of this writeup for their consideration.

- Are the facts expressed about problems with nitrate removal broadly enough accepted agreed-upon that public policy can be based on them?

- How can recommendations such as those incorporated into the VNRP maintain the incentive for developers to provide new housing, as well as the result of that being affordable? Is there a way that these goals can be accomplished in a voluntary (rather than regulatory) manner?

Options to Address Issues:

- Track efforts of the "cluster team" to develop means to promote clustering of residential units. Coordinate with the Growth Subcommittee on any recommendations.

- The Subcommittee could use the entries in the Clark Fork VNRP as a starting point for policy consideration on a statewide basis, this Interim or next. If the proposed State Water Plan chapter on Surface Water/Ground Water Interaction is likely to be initiated next Interim, the Subcommittee could

recommend the issues presented here, and the strategies included in the VNRP, be revisited in that process.

Subcommittee/Council Recommendations:

(to be determined based upon issues documented, options suggested, and Subcommittee/Council deliberation)

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Jim Roark -- Director of Environmental Health, Gallatin County (from Dennis)
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*Andy Skinner -- Developer
Gordon Morris -- Montana Association of Counties
Rick Hartz -- President Elect, Montana Association of Planners
Gavin Anderson -- Montana Department of Commerce
Emily Swanson -- State Representative
Michael Vogel -- Director, Pollution Prevention Program, MSU Extension
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Larry Mitchell/Mary Vandenbosch -- Staff, EQC Growth Issues Subcommittee
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* Denotes persons from whom comments were received and incorporated.

VNRP

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existing discharges should be required will ensure targets will be met in-strea

3.4.6 Septic Systems

To meet in-stream targets, the following actions will be implemented to reduce impacts from septic systems:

1. Missoula City-County Health Department

a.) A strategy for treatment of septic systems as point sources will be explored. In order to control the contribution of nutrients from septic systems entering surface water via ground water, changes will be needed in the way septic systems are permitted and, perhaps, constructed. This issue is especially relevant in the Missoula area where the large community investment in reducing nutrient discharge from the wastewater treatment plant will likely be offset in the long term by the continued proliferation of septic disposal systems. Addressing septics as a nutrient point source will require the cooperation of the City, County, Board of Health and Montana DEQ to determine the appropriate allocation of allowable discharge and necessary mitigation strategies. Since owners of land on which septic systems may be placed in the future are not signatories to the VNRP, it will be necessary to develop some requirements to mitigate these sources through state and local point source regulation. Septic systems meet the definition of "Point Source" in 75-5-104 which "means a discernible, confined and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged.".

The subcommittee does not intend that the treatment of septic systems as point sources will mean that state-authorized MPDES or groundwater permits would be required. The goal is to establish a sound basis for mandatory county and/or health department septic regulations (through Title 50 and Title 76 authorities) to deal with septic contributions to surface water.

b.) The strategy will also consider ways to control septic densities outside of areas serviced by wastewater treatment facilities. This will require working closely with DEQ's Subdivision Section to implement lot size requirements and appropriate subdivision review policies that address the impacts of groundwater on surface water quality and are protective of the nutrient targets. In Missoula County, outside the designated service area for the Missoula WWTP, the City, County, Board of Health and DEQ commit to development and implementation of a strategy that will:

1.) estimate the discharge of septic nutrient effluent and track the number of new septic permits and new public sewer connections each year in the Missoula Valley;
2.) develop a maximum permissible allocation of septic nutrient discharge to surface waters in the Missoula Valley;
3.) institute adequate requirements and policies to implement the allocation;

Water Quantity Relationships

Background: A review of Montana's 303(d) list shows many water bodies where one "probable cause" of impairment is listed as "flow alteration." According to EPA guidance, this probable cause can be assigned to a water body that evidences loss of habitat or erosional impacts due to flow fluctuations (e.g. from reservoir operation), excessive dewatering, interbasin transfers, or other significant changes to a typical flow regime (need to quote EPA guidance on this...) This cause typically affects the ability of the water to support aquatic life and fisheries more than other potential uses of the water body.

DEQ TMDL staff note that actions which can reduce impairments related to flow alteration include; considering downstream resources in reservoir operation planning, voluntary agreements to alter diversion timing or amount, improving efficiency of water use, and instream flow leasing, to name a few. Actions taken in the Ruby River drainage provide an example of voluntary agreements to alter flow regimes, installation of head gates, and other means to address impairments related to "flow alteration".

There was strong concern during the drafting of HB546 that water rights not be affected, hence the changes via amendment to Section 6 of the bill, which was encoded to read:

> **75-5-705. Nonimpairment of water rights.** Nothing in this part may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.

A commentor noted that he feels the federal Clean Water Act and Montana's TMDL law include language protecting state water rights, and the administrative mechanisms under state law for the allocation of water. In addition, he notes, the Montana Constitution protects water rights. He believes it is too early to know whether the language in HB546 offers the appropriate protection of state-based water rights. The language is an abbreviated version of the substantive language in the federal Act. He concludes that for a state TMDL program to have any support from the agricultural community, water rights protective language is a necessity.

DEQ staff note that they believe there are numerous voluntary actions that can be taken by irrigation districts, landowners, and dam operators to minimize the impacts of flow alterations and dewatering. They note that the department has absolutely no intention of interfering with any water rights.

A commentor provided a current illustration of a water quantity/TMDL issue -- on Careless Creek, a tributary to the Musselshell River below Deadman's Reservoir:

> DNRC sells irrigation water stored in the reservoir to downstream users on the Musselshell. A canal connects the reservoir to the Musselshell, but the canal cannot presently carry the volume needed to get the purchased water down to the users. So, DNRC diverts the water through Careless Creek. High, sustained flows of irrigation water have severely eroded the banks of the Creek, causing the Creek's listing on the 303(d) list as "impaired" due to flow alteration. DNRC continues to use Careless Creek to deliver purchased water, but at less damaging flow levels. Landowners are using 319 monies to repair banks, but they cannot get satisfaction from DNRC that DNRC will no longer put the high flows down the Creek.

<u>Federal Usurpment Issues</u>. Although EQC staff are currently unaware of specific evidence where the federal Clean Water Act has been interpreted as providing authority for the federal government to assert authority over water rights beyond federally-administered lands, concern exists over federal

4.) explore options for addressing discrepancies in surface water and groundwater standards in areas where the two are strongly interconnected; and
5.) develop a program to address potential groundwater contribution to surface water from existing small community land application and rapid infiltration systems.

2. Additional Septic Source Controls

Although the impetus for the development of the above strategy to treat septic systems as point sources and develop protective subdivision regulations is directly related to concerns over septic contributions to surface water in the Missoula area, the subcommittee recognizes that other developed and developing areas covered by the VNRP may also have similar problems. The subcommittee firmly believes that to ignore the impact of septic systems on surface water while implementing nutrient removal measures at publicly owned treatment works (POTW's) will not solve nutrient problems in the river for the long term. Where necessary and feasible, the subcommittee will implement strategies in VNRP communities that:

a.) recognize the connection between septic effluent, ground water, and surface water;
b.) review state and local regulations with the goal of seeking opportunities to remove disincentives and /or offer incentives for hook-up to POTW's;
c.) provide for the extension of sewer mains into high density unsewered areas as quickly as is feasible;
d.) provide for the orderly and timely connection of new subdivisions onto public sewer;
e.) give credit to wastewater treatment facilities for meeting nutrient reductions as additional hook-ups are made; and
f.) encourage planning for alternatives to municipal wastewater disposal to reduce nutrients from new development (such as land application, wetlands, and nutrient removal septic systems.)

3.4.7 Nonpoint Sources

1. Existing Nonpoint Sources

The findings of the Section 525 studies and the nonpoint source stream reach assessments provide a good foundation for the development of a nonpoint source nutrient control strategy for the Clark Fork basin.

Of 99 suspected impaired streams surveyed in the nutrient source assessment, 65 percent were given an overall rating of "impaired" (partial or non-support of the streams' designated uses.) Fifty-seven percent of the 272 individual reaches examined within those 99 streams were rated as impaired. The largest share of nonpoint source problems was found in the upper Clark Fork and Blackfoot River basins, where more than two-thirds of the assessed streams were rated as impaired. Conditions were marginally better in the Clark Fork drainage below Missoula and in the Bitterroot valley, where 45 and 33 percent of the assessed streams, respectively, were rated as impaired.

assertion of authority under other federal statutes. Some of that concern has been extended to concern that TMDL policies will eventually affect water rights, despite the wording incorporated in statute via HB546.

DNRC staff recently provided to EQC staff a paper prepared by the Idaho Department of Water Resources (for the American Bar Association), which attempts to refute a purported NMFS implication that irrigation withdrawals are "a significant reason why survival of Snake River salmon is not improving, and perhaps a significant reason for historical declines." Concerns about ESA-related requests for additional river flows was also of concern to participants at the first meeting of the (4-state) Legislative Leadership Council on River Governance, held earlier this year in Idaho.

Potential Policy Issues:

- Is there sufficient strength in the statutory wording to protect water rights in Montana? Are there other statutory methods to further protect them? How imminent is the concern?

- Is there an effective and available "menu" of actions (e.g. BMPs) that can be invoked to address issues of flow modification without getting into the arena of water rights?

- If flow-related impairments required an alteration in a diversion regime, could a voluntary agreement to alter a diversion regime (e.g. the Ruby example) be incorporated into a TMDL without decreasing long-term control over water?

Options to Address Issues:

- EQC staff could check further with legal staff on the foundations for concern related to federal usurpment of water rights.

Subcommittee/Council Recommendations:

1. The Subcommittee recommends exploration of potential cooperative opportunities to mesh streamflow-related water quality impairment problems with State drought planning efforts. (Needs clarification from DEQ/DNRC staff.)

2. The Subcommittee recommends continued Montana representation on the Legislative Leadership Council for River Governance. Montana's delegates to this Council should request further exploration of this issue and development of options for action, if appropriate.

Persons Coordinated with in the Development of this Summary:

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*John Bloomquist -- Montana Stockgrowers Association/Statewide TMDL Advisory Group
Don MacIntyre -- Chief Counsel, DNRC
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*Denotes persons from whom comments were received and incorporated.

Best Management Practices (BMPs)

Background: There are two similar terms used in Montana law and rule relating to practices applied to improve water quality; (1) "water quality protection practices", and (2) "reasonable land, soil and water conservation practices". They are defined and discussed below (including the source of their definition):

> **"Water quality protection practices"** means those activities, prohibitions, maintenance procedures, or other management practices applied to point and nonpoint sources designed to protect, maintain, and improve the quality of state waters. Water quality protection practices include but are not limited to treatment requirements, standards of performance, effluent standards, and operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from material storage" (75-5-103(35), MCA).

As shown, this definition is included in statute. It was enacted in 1993, within a bill that addressed non-degradation. The statement of intent for that bill included the following language:

> ... The legislature clearly intends that the nondegradation policy protect and maintain existing quality of state waters from any loss in the quality of those waters. The non-degradation policy is intended to apply to any activity that has the potential to affect existing water quality and requires department review of all such activities to ensure that degradation does not occur.
> In recognition that certain activities promote general welfare and may justify lower water quality in a particular water segment, the legislature intends that degradation be allowed in limited circumstances and under certain conditions. For example, if there is no alternative to a proposed project that does not result in degradation and the project is found to be in the best interests of the state, degradation may be allowed provided that **water quality protection practices** are implemented that limit degradation to the extent determined to be economically and technologically feasible.

In contrast (sort of), the second term is not defined in statute, is used in statute (including those enacted by HB546), and is defined in rule, as follows:

> **"Reasonable land, soil, and water conservation practices"** means methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and non-structural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities. (ARM 17.30.602(21))

This term is used in statute nine times, as follows:

1) A water body can be considered "threatened" if proposed sources are not subject to pollution prevention or control actions required by certain permits or provisions, including **reasonable land, soil, and water conservation practices**. (75-5-103(31)(a), MCA)

2) Montana's statutes specify that treatment of wastes to a condition purer than the natural condition of the receiving stream is not necessary. "Natural" is described (in part) as conditions or material present over which man has no control or from developed land where all **reasonable land, soil, and water conservation practices** have been applied... (75-5-306(2), MCA)

3) Activities that are nonpoint sources of pollution initiated after April 29, 1993, when **reasonable land, soil, and water conservation practices** are applied, and existing and anticipated beneficial uses will be fully protected, are not subject to Montana's nondegradation provisions, as such activities are statutorily determined to be non-significant. (75-5-317(2)(b), MCA)

4) Passage of HB546 mandated the DEQ to coordinate with others to develop **reasonable land, soil, and water conservation practices** specifically recognizing established practices and programs for nonpoint sources. (75-5-703(2), MCA)

practices". Is this confusion resolvable through a common and publicized interpretation, or is statutory clarification necessary? What level of concern exists regarding the terminology used and referenced in HB546? Should "reasonable land, soil, and water conservation practices" be defined in statute?

- Whether or not the definitional question noted above should be pursued, the TMDL legislation envisions DEQ putting effort into developing and promoting a "system" of practices. How is this being fulfilled? On a site-specific basis, or water body-specific basis? Or, is there effort on a broader basis to improve the practices as they are currently applied? (See DEQ response on preceding pages.)

- Is there a role for the Subcommittee and/or Council in this area? Does the Subcommittee/Council wish to respond to DEQ's specific request for assistance in developing BMPs for 310 permits?

- The department's position related to BMP's appears to presume that local watershed groups would take a selection of standard BMPs (that do not yet appear to be aggregated anywhere in a useful fashion) and tailor them to their needs. It is unclear whether this supposes that DEQ's BMP program does not envision a high level of technical assistance from DEQ staff to help local groups determine what level of BMPs are necessary to restore beneficial uses?

Subcommittee/Council Recommendations:

1. The Subcommittee recommends that a broad selection of entities, especially public agencies (including FWP and DOT), need to adopt BMPs (i.e. standards of best management practices to reduce non-point source water pollution.

2. DEQ's planned update and revision of their NPS Management Plan provides a unique opportunity to fulfill an EPA mandate (to update the Plan) and be creative in further developing and describing voluntary BMPs for nonpoint source land uses. The department should check on whether such plans could take the format of individual "guides" to nonpoint source pollution generators, and develop helpful technical and informational materials while fulfilling the federal mandate, as well as the HB546 mandate to "develop and promote" a system of reasonable land, soil, and water conservation practices.

3. EQC staff should check further into what incentive programs exist in Montana and elsewhere for implementation of nonpoint source BMPs (beyond those incentives documented for the EQC BMP mini-seminar). An example might be Utah's Agricultural Resource Development Loan Program which offers low-interest loans for voluntary BMP implementation associated with agricultural lands. If the foregoing option were adopted, any information generated on incentives could be incorporated into the BMP information documented for, and provided to, landowners as part of the NPS Plan update.

4. EQC staff have been informed that the Department of Commerce is planning to produce a booklet in the vein of "Code of the New West" discussed at previous EQC and Subcommittee meetings. The Subcommittee will request information on this effort and determine whether the proposal fulfills their interests in such a publication.

5) HB546 also required the DEQ to assist and inform landowners regarding the voluntary program described in (4), after a TMDL is approved. (75-5-703(6)(c), MCA) This is considered a pollution control measure via the language in the subsequent subsection in statute.

6-8) Section 75-5-703, MCA, subsections 8 and 9 refer three times to this term, as follows:

"The department shall support a voluntary program of **reasonable land, soil, and water conservation practices** to achieve compliance with water quality standards for nonpoint source activities for water bodies that are subject to a TMDL developed an implemented pursuant to this section.

... If the monitoring program ... demonstrates that the TMDL is not achieving compliance with applicable water quality standards within 5 years after approval of a TMDL, the department shall conduct a formal evaluation of progress in restoring water quality and the status of **reasonable land, soil, and water conservation practice** implementation to determine if:
(a) the implementation of a new or improved phase of voluntary **reasonable land, soil and water conservation practice** is necessary;
(b) ...; or
(c) ..." (75-5-703(8) and (9), MCA)

9) Lastly, pending completion of a TMDL, new or expanded nonpoint source activities affecting a listed water body may commence and continue, provided those activities are conducted in accordance with **reasonable land, soil, and water conservation practices.** (75-5-703(10)(c), MCA)

During Legislative deliberations on HB546, Legislative staff raised the question to DEQ attorneys as to whether the bill needed to have a definition of "reasonable soil, land, and water conservation practices" in , since the term was used fairly often, and seemed to connote an important threshold of activity. DEQ legal staff made an effort to determine how to define the term, but gave up, noting that there appeared to be many definitions, and not wishing to put the definition in rule in statute. The issue was not pursued, due to the speed the bill was moving through the Legislature, nor was it raised in the legal review of the bill by the Code Commissioner.

Another term relevant to this discussion is "BMP" or "Best Management Practice". This term is not defined in DEQ's statutes or rules, but is used informally to refer to practices that can be applied to reduce nonpoint source water pollution. The DEQ has incorporated Montana's Silviculture BMPs into their Nonpoint Source management program, as well as the NRCS Tech. Guide standards (for agriculture), but these do not have the monitoring component that appears to be required by the term used in statute. (DEQ staff note that Montana's Nonpoint Source Management Plan was completed in 1991, and is scheduled to be updated and revised in 1999.

The term, "reasonable land, soil, and water conservation practices", is currently interpreted by the author of the definition as requiring "more than the standard BMPs". According to him, standard BMPs are necessary, but not necessarily sufficient to comply, as there needs to be monitoring to show the BMPs are working (i.e. protecting present and reasonably anticipated beneficial uses). The author of the definition was not aware of any specific practices that met the definition, but noted that those being used by the Forest Service and BLM were more likely to meet it because of the monitoring that goes along with their BMP implementation. This interpretation may leave the statute somewhat circular in its implementation, especially with respect to new or expanded nonpoint source activities on streams that are on the list.

<u>What EQC has done so far...</u> EQC involvement in discussing BMPs is not new. The EQC was instrumental in the development of Montana's silvicultural BMP program, and continues to track the

implementation of these BMPs. During the 1995-96 Interim, the EQC heard an update from the Grazing Practices Work Group that was working to tailor general grazing BMPs to Montana.

In this Interim, one of DEQ's requests of the EQC was to assist them with policy development. In an August, 1997, meeting with the EQC co-chairs and DEQ director and staff, an option for the EQC to assist DEQ with technical policy issues was discussed, noting an area of focus might be improvement of BMPs. This was a topic the EQC had already identified in their Work Plan as a topic they wished to pursue in the 1997-98 Interim.

In March, 1998, the EQC hosted a mini-seminar on BMPs related to nonpoint source water pollution control. In preparation for the meeting, EQC staff compiled a background matrix on the nonpoint BMP information that they knew about, divided by type of nonpoint pollution addressed in the state's 1990 *Nonpoint Pollution Plan*. A copy of the matrix is attached. The seminar consisted of an agency representative for each of the six topics providing their perspectives on the effectiveness of BMP application in Montana, and how they and their application could be improved. After the panel, a variety of invited participants shared their perspectives and suggestions. The presenters contributed the following as "keys to success" for BMPs to be applied and effective:

Silviculture:
- BMPs need to be stakeholder initiated;
- There needs to be a strong educational component;
- There also needs to be a monitoring component to evaluate whether BMPs are achieving their intent;
- The measures, and the information used to develop them, have to be credible;
- The BMPs have to be evolving and non-static;

Agriculture:
- BMPs need to be applicable on an area-wide level;
- They need to be locally led and coordinated;
- They should be developed through a collaborative process
- They should include strong information and education components
- They need to be flexible and phased;
- Persons desiring results need to be patient;

Resource Extraction:
- BMP effectiveness is dependent upon commitments and competence of operators
- BMPs need to be achievable and cost-effective

Hydromodification:
- BMPs need to be voluntary;
- They need to incorporate good technical information;
- Education needs to be provided;
- There needs to be funds to implement the measures;

Land Disposal:
- People need to get out in the field to help operators;

Construction:
- Operators need to know causes of problems;
- They need to install needed measures and monitor for effectiveness.

The following suggestions were made by the commentors:
- Education is critical, especially for rural subdivision owners;
- Keep funding Extension efforts;
- Technology needs to be improved;
- Agriculture needs to be kept viable in Montana;
- Avoid the "one size fits all" approach;
- Increase education and awareness of BMPs;
- Education needs to focus on the message that practices are affordable and that practices work;

- Funding should be provided to Montana Bureau of Mines and Technology for field education and publications;
- BMPs are needed for hobby miners;
- To change practices, reasons need to be given, not rules;
- Look at the "310" process as a model for protecting and restoring waterways.
- Look at "numbers" when determining whether BMPs work;
- Look at effectiveness of erosion control program (regulatory component of CD) in Lewis and Clark County;
- Improve education at the local level -- CDS are too busy with 310 and ordinance programs;
- Give credit to those doing well;
- Rural landowner BMPs would be helpful (for those with 1-5 acre holdings);
- Funding should be provided for the small, rural programs at DNRC
- Provide broad support to varied educational efforts -- these help lay the foundation necessary to get to BMPs;
- Effectiveness monitoring is needed, as well as an iterative process based on the results;
- Provide support for education -- both publications, etc., and on-the-ground interaction -- extend these to other land uses;
- Monitor, to determine whether installation and effects are meeting water quality standards and statutory goals;
- Find BMPs that pay for themselves (e.g. pest "scouting");
- collect economic data on economic benefits of BMP implementation;
- The Dillon EQC meeting would provide an opportunity to see BMPs implemented in the field;
- Coordinate information on BMPs across programs and industries.

After the conclusion of the seminar, the Council decided that its Subcommittees should emphasize BMPs within their work scope and that they wished to be updated on relevant efforts by others, including the Northern Plains Resource Council's efforts related to BMP effectiveness in the Yellowstone area. (EQC staff have not yet been successful in obtaining a summary of NPRC's evaluation criteria, or results.)

In May, 1998, EQC staff received a request from one of DEQ's Outreach Coordinators that there was "a strong need" for BMPs related to stream modification permits (124 and 310 permits) (see attached). During the last Legislative session, a bill was introduced related to developing BMPs for 310 permits; it failed. During coordination for the EQC meeting in Dillon, CD representatives complained of having to spend an inordinate amount of time traveling to review simple 310 applications, with less involvement over the types of streamside situations that contributed major amounts of sediment to stream systems.

Others are asking questions and trying to pursue BMP development and application. According to staff to the Flathead Basin Commission, they are not sure what mechanisms can be employed to attain the sediment reduction targets they have set for the basin. They are seeking to hire a part-time coordinator to try to develop approaches and help implement them.

There has been concern expressed at Statewide TMDL Advisory Group meetings over what level of BMP will be considered adequate in the TMDL program. The commentor noted that he had heard that some specific, aggressive level of BMP was feared (e.g. "turbo" BMPs). This is not an unusual interpretation, as at least one DEQ staff member interprets the term as requiring monitoring data showing beneficial uses are supported (see discussion above).

In response to the information provided in the July version of this writeup, one commentor questioned why the silviculture BMPs are touted as so good when there is still a lot of documented "impairment" from forest practices. Another commentor suggested that application of BMPs should be considered adequate, as the term "best" indicates "best" and at least "reasonable." Another commentor suggested that

caution should be exhibited when considering changes to Montana's nonpoint source management program through the state TMDL provisions. He states that Congress has explicitly left it up to the states on how nonpoint source issues will be addressed, that Montana has an EPA-approved Nonpoint Source Management Program, and that Montana is in compliance with the requirements of the federal Clean Water Act as to nonpoint source management. This commentor continues to note that the intent of those from the nonpoint source industries/activities who worked on HB546 was to have the TMDL program "dovetail" with the nonpoint source management program; this will be the only manageable way to address the issue of nonpoint source concerns and the concept of TMDL development. If definitional changes are necessary, he suggests only those which result in this intent being clarified.

Discussion at the EQC's August 4th Water Policy Subcommittee meeting included comments that voluntary measures are going a long way, especially with larger ranches and farms, as these owners are receiving information from NRCS of state agencies. A problem is with ranchettes; there are pamphlets for them, but getting them to the right people is a problem. Other discussions focussed on the potential benefits something like the "Code of the New West" (developed by citizens in Beaverhead County) might have in addressing issues related to newcomers' unfamiliarity with rural-related issues and policies in Montana. There was also discussion of MACD courses offered to realtors related to such issues.

DEQ's Position. DEQ staff state that the definition of "reasonable, land, soil and water conservation practices" is tied to protecting beneficial uses. The connection to beneficial uses is important in the context of TMDLs, since a TMDL is required to achieve water quality standards and restore beneficial uses. As discussed in the policy issue, a set of standard BMPs have been developed for source categories such as agriculture and silviculture and it probably would be advantageous to develop BMPs for other categories. It is important to understand that even established BMPs will continue to evolve with new methods and technological advances. In addition, BMPs need to be tailored to the individual watershed.

The department anticipates that standard BMPs (tailored by local groups and landowners for the watershed) will be sufficient to achieve water quality standards and restore beneficial uses for the vast majority of impaired water bodies. Therefore, in most cases BMPs will constitute "reasonable, land, soil and water conservation practices." However, in a few cases, effectiveness monitoring may indicate that additional strategies are needed to achieve standards ad restore beneficial uses. In these cases, the department will work with local conservation districts, watershed advisory groups, landowners, and other interested parties to revise the watershed management plan or TMDL. Although some might label these as "turbo BMPs", the department believes that is clearly an overstatement. The department considers the additional measures to be simple improvements or enhancements to existing BMPs and are likely to be applied on a very limited number of impaired waters.

Any change in definition that eliminates the requirement to achieve water quality standards and restore beneficial uses will be contrary to the purpose of the TMDL program. Such a change in definition could, in some cases, require point sources to assume an inequitable portion of the clean up costs or the water body would remain impaired.

Potential Policy Issues:

- Regarding definitions, at a minimum, there is some current confusion regarding how the portions of the TMDL statutes incorporate consideration of BMPs (e.g. general nonpoint water pollution reduction practices), and how that relates to the term "reasonable land, soil, and water conservation

practices". Is this confusion resolvable through a common and publicized interpretation, or is statutory clarification necessary? What level of concern exists regarding the terminology used and referenced in HB546? Should "reasonable land, soil, and water conservation practices" be defined in statute?

- Whether or not the definitional question noted above should be pursued, the TMDL legislation envisions DEQ putting effort into developing and promoting a "system" of practices. How is this being fulfilled? On a site-specific basis, or water body-specific basis? Or, is there effort on a broader basis to improve the practices as they are currently applied? (See DEQ response on preceding pages.)

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4. EQC staff have been informed that the Department of Commerce is planning to produce a booklet in the vein of "Code of the New West" discussed at previous EQC and Subcommittee meetings. The Subcommittee will request information on this effort and determine whether the proposal fulfills their interests in such a publication.

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*Nick Bugosh -- DEQ
John Cobb -- Representative, Montana Legislature
Mark Holston -- Flathead Basin Commission (for distribution to agricultural representative)
*Gene Surber -- MSU Extension
*Mark Simonich -- Director, DEQ
Ruth Watkins -- Tri-State Implementation Council

*Denotes persons from whom comments were received and incorporated.

MA nar Draft)

SELECTED SOURCES OF NONPOINT-SOURCE WATER POLLUTION[1], BY LAND USE	Most relevant informatic voluntary stewardship/l practices in Montana	centives to use the oluntary practices	BMPs are restorative, protective, or both	BMPs are required
SILVICULTURE	• Forestry BMP publicatic through DNRC (BMPs ha since publication)	Interest in protecting ater quality Concern over additional egulation Familiarity with BMPs is ecessary to compete for nd fulfill sale contracts equiring BMPs.	**Protective;** potentially restorative	- Specific practices are required in SMZs (Streamside Management Zones) - All state and some private sales require BMP compliance by contract.
AGRICULTURE: - Rangeland/Grazing	• NRCS "Technical Guide product of Grazing Practi likely requires assistance • Grazing BMP booklet b DNRC - CD Bureau (targ • "Tips on Land and Wate Small Farms and Ranche • Montana Farm *A* Syst Fact Sheets (MSU Ext./U • "Common Sense and W (DHES) • Groundwater Protectior Ranchers (DHES/AERO)	Concern for resources Interest in diversifying come sources (e.g. ecreation access) To avoid regulation and aintain flexibility Cost-share opportunities	**Both.**	- BMPs required for cost-share/payment programs (EQIP, CRP, 319, 223, RDGP grants) - Required for grazing permits on federal land; some required on state land - DEQ could require if practices are causing "pollution"
- Dryland	• NRCS Tech Guide; like assistance to implement • "Tips on Land and Wat • Fertilizer & Pesticide Bl (MSU Ext.) • "Environmental Stewar Facilities" (MSU Ext./Dep • "Common Sense and V • "Groundwater Protectic	ame as above (plus loss f production for saline eeps).	**Mostly protective.** (restorative for seeps)	- Required for cost-share/payment programs - DEQ could require if causing "pollution"
- Irrigated	(same as above)	ame as above.	**Mostly protective.**	Same as above.
- Feedlots/Animal Holding	• NRCS Tech Guide • DEQ "Guide to Animal Management and Water in Montana"	ame as above.	**Both.**	- BMPs required if DEQ Confined Animal Feeding Operation (CAFO) permit required.

STATUS OF "BEST MANAGEMENT PRACTICES" (BMPs) IN MONTANA (Seminar Draft)

SELECTED SOURCES OF NONPOINT-SOURCE WATER POLLUTION[1], BY LAND USE	Most relevant information available on voluntary stewardship/low-impact practices in Montana	A Montana natural resource agency endorses/ distributes information on practices	Practices are a result of collaborative effort between agency and Montana land use community	Multi-Agency official endorsement/ encouragement of recommended land use practices	Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
SILVICULTURE	• Forestry BMP publication available through DNRC (BMPs have been revised since publication)	Yes. (DNRC)	Yes. EQC-sponsored effort in 1988-89. (Result of 1987 HJR49)	Yes. DEQ, USFS, BLM, FWP, and others participate in program and audits.	Yes. (Workshops jointly provided by Montana Logging Association and DNRC.)	No. (May be tailored to site conditions.)	Yes. (Random sample followup by BMP audit teams.)	- Interest in protecting water quality - Concern over additional regulation - Familiarity with BMPs is necessary to compete for and fulfill sale contracts requiring BMPs.	Protective; potentially restorative	- Specific practices are required in SMZs (Streamside Management Zones) - All state and some private sales require BMP compliance by contract.
AGRICULTURE: - Rangeland/Grazing	• NRCS "Technical Guide" (includes product of Grazing Practices Work Group); likely requires assistance to implement • Grazing BMP booklet being prepared by DNRC - CD Bureau (target 1/99) • "Tips on Land and Water Management for Small Farms and Ranches" (DNRC/MSU) • Montana Farm "A" Syst Worksheets and Fact Sheets (MSU Ext./USDA) • "Common Sense and Water Quality" (DHES) • Groundwater Protection for Farmers and Ranchers (DHES/AERO)	Yes. (DEQ, DNRC, Conservation Districts, NRCS, MSU Extension)	Yes. Grazing Practices Work Group effort (1994-96?); some public comment on NPS Mgmnt. Plan; multi-agency advisory group for Farm "A" Syst products	Yes.	Yes. (NRCS Grazing Lands Conservation Initiative, DNRC Rangeland Resource Program, DNRC Consevation Districts Bureau, CDs, Extension.)	Sort of. (Some ability to choose practices based upon effects trying to address; some regionaliza-tion in prescribed grazing practices)	Not for voluntary application. (BMP application checked by permitting agency if BMPs were required.) Grazing Pract. Work Group considering audit program, with a demonstration audit this spring.	- Concern for resources - Interest in diversifying income sources (e.g. recreation access) - To avoid regulation and maintain flexibility - Cost-share opportunities	Both.	- BMPs required for cost-share/payment programs (EQIP, CRP, 319, 223, RDGP grants) - Required for grazing permits on federal land; some required on state land - DEQ could require practices are causing "pollution"
- Dryland	• NRCS Tech Guide; likely requires assistance to implement • "Tips on Land and Water..." (DNRC/MSU) • Fertilizer & Pesticide BMP Info Sheets (MSU Ext.) • "Environmental Stewardship for Fertilizer Facilities" (MSU Ext./Dept. of Ag.) • "Common Sense and Water Quality" • "Groundwater Protection for Farmers..."	Yes. (same as above, plus MT Salinity Control Association)	Public comment on NPS Plan	Informal. (DEQ, DNRC, Mt. Dept. of AG.)	Yes.(DNRC, Mt. Sal. Control Assoc., MSU Ext., Mt. Dept. of Ag. pesticides)	Sort of. (some ability to choose practices based upon effects trying to address)	Not for voluntary application.	Same as above (plus loss of production for saline seeps).	Mostly protective. (restorative for seeps)	- Required for cost-share/payment programs - DEQ could require causing "pollution"
- Irrigated	(same as above)	Yes. (same as for range)	Public comment on NPS Plan	Informal. (see above)	Yes. (CDs, NRCS, DNRC, Ext., Agrimet, Dept of Ag - pesticides)	Sort of. (see above)	Not for voluntary application.	Same as above.	Mostly protective.	Same as above.
- Feedlots/Animal Holding	• NRCS Tech Guide • DEQ "Guide to Animal Waste Management and Water Quality Protection in Montana"	Yes. (same as for range)	unknown	Informal. (see above)	Yes. (CDs, NRCS, DEQ, DNRC, Ext.)	Sort of. (see above	Not for voluntary application.	Same as above.	Both.	- BMPs required if DEQ Confined Animal Feeding Operation (CAFO) permit required.

STATUS OF "BEST MANAGEMENT PRACTICES" (BMPs) IN MONTANA (Seminar Draft) (cont.)

SELECTED SOURCES OF NONPOINT-SOURCE WATER POLLUTION[1], BY LAND USE	Most relevant information available on voluntary stewardship/low-impact practices in Montana	A Montana natural resource agency endorses/ distributes information on practices	Practices are a result of collaborative effort between agency and Montana land use community	Multi-Agency official endorsement/ encouragement of recommended land use practices	Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
RESOURCE EXTRACTION/ MINING: - Abandoned/ Inactive Mines	• DEQ standards and specifications for abandoned mine reconstruction contractors • No info for mine owners	Yes, for contractor info. (DEQ)	No.	No.	No.	Contractor info only.	Compliance inspections for reclamation contracts.	None.	Reclamation contracts are both.	
- Placer Mining	• DEQ/Mt. Bureau of Mines and Geol. "Placer Mining BMPs" publication	Yes. (DEQ and MBMG)	No.	Yes. (DEQ, MBMG, USFS, EPA, BLM)	No. (MBMG 1997 application for $ unsuccessful)	No.	Small mines are inspected.	unknown	Protective.	- If mine requires permit (i.e. does not quality for Small Miner Exemption)
HYDROMODIFI-CATION: - Streambank/ Stream Channel Alterations and Construction Activities	• "Montana Stream Management Guide" (DEQ/MACD) (mostly information; some practices) • NRCS Tech Guide (Section 4 - Restoration Techniques)	Yes, for Stream Guide.	Yes, for Stream Guide. (DEQ, MACD, FWP, DNRC, Rip./Wetl. Asso., EPA, USFS)	Sort of; through Stream Guide?	Nothing Specific.	No.	No.	- Interest in stream protection/restoration	Both.	- 310 permit may require Tech Guide practices
- Flow Regulation/ Modification	• A smidgen in the Stream Management Guide (p. 26)	No. (except Stream Guide)	Yes for Stream Guide practices (?)	Nothing formal.	No.	No.	No.	NA	NA	
- Construction and Operation of Dams	• No voluntary information readily available	No. (except for regulated dams)	No. (no practices)	No. (no practices)	Only for emergency response	No.	No.	NA	NA	- Specific construction and operation practices required for high-hazard dams
LAND DISPOSAL: - Solid Waste and Sludge Disposal	• Montana Guidance Manual for Controlling Stormwater Discharges, Vol. 2 (BMPs)[2] • DEQ Guide to Animal Waste Management and Water Quality Protection in Montana	Yes. (DEQ)	No. (yes for Animal Waste Guide)	Yes. (for what's available) (EPA/DEQ)	Yes. (MACO/DEQ)	Not voluntary, but must choose practices to meet goals	Partial inspections under regulatory program.	None	Protective (permitted facilities)	- BMPs required at permitted solid waste facilities - BMPs are required at sludge disposal facility
- On-site Wastewater Treatment	• 1980 EPA Design Manual for Onsite Wastewater Treatment Systems • Home*A*Syst -- An Environmental Risk-Assessment Guide for the Home (MSU)	Yes. (DEQ)	No.	Yes. (see above)	Only on design standards (EPA/DEQ)	No.	No.	No.	Protective	- Compliance with design standards required
- Runoff/Leachate from Land Treatment or Hazardous Waste Disposal Sites	• 1986 DEQ publication on General Guidelines for Operation of Soil Treatment Facilities	Yes. (DEQ)	No.	Yes. (EPA/DEQ; DEQ only for land treatment)	Yes. (DEQ)	Must meet goals; practices modified for site-specific conditions	Permitted facilities only	- Meet regulatory requirements	Protective	- BMPs required at permitted land treatment facilities - BMPs required at permitted hazardous waste facilities

BEST
MONTANA (Seminar Draft) (cont.)

Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
No.	Contractor info only.	Compliance inspections for reclamation contracts.	None.	Reclamation contracts are both.	
No. (MBMG 1997 application for $ unsuccessful)	No.	Small mines are inspected.	unknown	Protective.	- If mine requires permit (i.e. does not quality for Small Miner Exemption)
Nothing Specific.	No.	No.	- Interest in stream protection/restoration	Both.	- 310 permit may require Tech Guide practices
No.	No.	No.	NA	NA	
Only for emergency response	No.	No.	NA	NA	- Specific construction and operation practices required for high-hazard dams
Yes. (MACO/DEQ)	Not voluntary, but must choose practices to meet goals	Partial inspections under regulatory program.	None	Protective (permitted facilities)	- BMPs required at permitted solid waste facilities - BMPs are required at sludge disposal facility
Only on design standards (EPA/DEQ)	No.	No.	No.	Protective	- Compliance with design standards required
Yes. (DEQ)	Must meet goals; practices modified for site-specific conditions	Permitted facilities only	- Meet regulatory requirements	Protective	- BMPs required at permitted land treatment facilities - BMPs required at permitted hazardous waste facilities

SELECTED SOURCES OF NONPOINT-SOURCE WATER POLLUTION[1], BY LAND USE	Most relevant informatio voluntary stewardship/lo practices in Montana	entives to use the untary practices	BMPs are restorative, protective, or both	BMPs are required
CONSTRUCTION: - Urban/Suburban Development	• Montana Sediment and Manual • Best Development Pract example)	ne.	Both.	- Sediment/Erosion control BMPs are required if a construction permit is required (disturbing 5 acres or more).
- Transportation	• (same as above) • Mt. Dept. of Trans. BMP control (road and bridge s • BMPs for road salts	ne.	Both.	- Contractual conditions only
- Stormwater	• Montana Guidance Man Stormwater Discharges, V • Montana Sediment and Manual	ne.	Both.	- BMPs are required if a stormwater permit is required

[1] Nonpoint-Source water pollution is characterize and (4) discharge is related to man's use of the land (DHES, 1991).

[2] For land disposal entries, the state sets the goa

Draft last revised 3/13/98.

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CONSTRUCTION: - Urban/Suburban Development	• Montana Sediment and Erosion Control Manual • Best Development Practices (Florida example)	Yes, for sediment/ erosion control (DEQ).	No. (DEQ adopted WA state sed./erosion control specs.)	Yes, for sed/erosion control	Yes, for sediment/ erosion control. (DEQ)	No. (can be adapted to site-specific conditions)	Not for voluntary practices.	None.	Both.	- Sediment/Erosion control BMPs are required if a construction permit is required (disturbing 5 acres or more).
- Transportation	• (same as above) • Mt. Dept. of Trans. BMPs for erosion control (road and bridge specs.) • BMPs for road salts	Yes, for sed./ erosion and MDOT specs.	No. (see above for sed./ erosion control)	Yes, for sed/ erosion control and MDOT specs.	Yes, for erosion/sed. control and MDOT standards. (DEQ/MDOT)	No. (see above)	MDOT inspections	None.	Both.	- Contractual conditions only
- Stormwater	• Montana Guidance Manual for Controlling Stormwater Discharges, Vol. 2 (BMPs) • Montana Sediment and Erosion Control Manual	Yes, for sediment/ erosion control (DEQ).	No. (see above for sed./ erosion control)	Yes.	Yes, for sediment/ erosion control. (DEQ)	No. (see above)	Not for voluntary practices.	None.	Both.	- BMPs are required if a stormwater permit is required

[1] Nonpoint-Source water pollution is characterized by; (1) pollution is diffuse, (2) discharges occur by dispersed pathways, (3) discharge is generally associated with precipitation and runoff, and (4) discharge is related to man's use of the land (DHES, 1991).

[2] For land disposal entries, the state sets the goal, and provides technical guidance on options to reach that. Achieving the goal is mandatory, but there are choices as to method.

Draft last revised 3/13/98.

Interagency Coordination

Background:

In 1995, top officials of 22 agencies (via an MOU) adopted a "framework for cooperation to sustain ecosystems, watersheds, and communities in Montana." Their agreement states, in part:

> ... local people play an important role in managing watersheds and ecosystems ... one of the responsibilities of government is to provide them with the appropriate tools, technical assistance, positive incentives, and resources to accomplish this task.

Specific components of the agreement included:

- It created the Montana Interagency Coordinating Group, made up of the 22 signatory agencies and groups, which is to review the MOU at its annual meetings to determine whether it should be modified or updated.

- Unless terminated or extended, the MOU will expire July 1, 1999.

- It committed agencies to the broad goals of exchanging information, sharing resources, and cooperating, while recognizing varying program directives. It also committed the signatories to supporting the accompanying "Framework" document and its implementation strategy.

- It acknowledged that Montana's Watershed Coordination Council will play a valuable role in pioneering "a better future for Montana and Montanans."

This MOU and the Watershed Coordination Council are commonly referred to when agency representatives discuss watershed-related interagency coordination in Montana. According to a recent report from the Governor's Office staff, however, it is unknown whether the Interagency Coordination Group has fulfilled the commitment to meet annually, nor has the Office taken a position as to whether the MOU should terminate, be extended, or be modified before it expires next year.

The Montana Department of Environmental Quality, with its new role in the arena of TMDL development has discussed the challenges of interagency coordination in several arenas. With consultant time provided by EPA, the DEQ, EQC, Watershed Coordination Council, and the Statewide TMDL Advisory Group co-sponsored an interagency coordination meeting in March, 1998, to discuss issues and opportunities for water quality-related interagency coordination in Montana. Several programs presented their mandates, goals, and progress, and some discussed how they prioritize their projects. Although there had been a proposal to discuss some relatively "formal" coordination schemes in other states, the discussion focused upon Montana's current coordination structure, via the MOU, Coordination Council, and Conservation Districts. It was unclear from the discussion whether attendees felt that Montana's existing structure was adequate to address future challenges, but there was hesitancy to discuss a "new" structure.

Due to the Subcommittee's interest in promoting interagency coordination in Montana, and the HB546 implementation-related challenges, the Subcommittee requested an update from the Governor's Office on the status of the interagency MOU; whether the commitments in it were being fulfilled, whether it was fulfilling its goal, and whether improvements could be made in its commitments or implementation so that

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current interagency coordination needs could be better addressed.

Ms. Lapeyre of the Governor's Office coordinated with the five Montana signatory agencies to provide a state response to these questions to the Subcommittee at their June, 1998, meeting. In her response, she noted that the Administration "remain(s) in support and are committed to the goals, guiding principles and processes outlined in the ... MOU. The framework established by the MOU is reasonable and logical, and describes an appropriate way for governmental agencies to conduct business with each other and the public..." She provided several examples of projects undertaken "in the spirit but not under the auspices of the MOU," including; bull trout watershed working groups, the Upper Yellowstone River Task Force, and the Westslope Cutthroat Steering Committee. She noted that the MOU serves as "an umbrella agreement which sets goals and objectives" for interaction related to watershed issues. The memo concluded with the following:

> If we re-review what the parties agreed to under the MOU and the actions which are currently being taken by the five state agencies, we can demonstrate we are developing and sharing information; we are working more closely together to share available resources; we are carrying out activities to meet the purpose of the MOU; and the Montana Watershed Coordination Council and GIS Steering Committee are active within state government.
>
> Having mentioned this, we believe we must continue to improve our efforts to coordinate activities. This goal is not unique to watersheds, it is applied to all components of state government. A continual review of our actions and how to improve the inter-working of government is appropriate and constructive. Therefore, if you or other members of EQC have any suggestions on ways to improve coordination, we would greatly enjoy hearing them so they may be taken into consideration. (J. Lapeyre, Memo to Water Policy Subcommittee Co-Chairs, June 24, 1998)

At the August 4th Water Policy Subcommittee meeting, the current Chair of the Montana Watershed Coordination Council (see discussion below) commented that he coordinated a meeting with Governor's Office staff to discuss a potential gathering of the MOU signatories to revisit the MOU. He is also drafting a "Talking Paper" on the topic (presumably to present to the Coordination Council at their October meeting).

In a related effort, the Montana Watershed Coordination Council (MWCC) is drafting a Work Plan, to provide some strategic approach to its efforts, and recently completed its first draft of this product. The stated purposes of the Coordination Council are as follows:

> 1) To encourage local people to take a proactive, collaborative approach (e.g. Coordinated Resource Management planning) that will address natural resource issues and concerns. Assistance to local planning groups will be provided upon request to help them achieve their goals.
>
> 2) To serve as a statewide coordination network for Montana's natural resource agencies and private organizations to share resources, identify and capitalize on opportunities for collaboration, and avoid duplication of efforts. The Council will foster coordination, communication, and cooperation rather than set policy or usurp any organization's authority or responsibility.
>
> 3) To serve as a forum that establishes a strong link with local watershed groups needing assistance to help enhance conserve and protect natural resources and sustain the high quality of life in Montana for present and future generations.

A Coordination Council Chair is elected every two years, but membership on the Council is open to whomever wishes to attend the quarterly meetings. The Council is not recognized in statute or Executive Order, nor does it have a budget. Attendees attempt to mobilize resources as needed to support Council

activities and proposed services. The Council has been relatively productive recently, which, some believe, is in contrast to the past. As one "Action Item" in their first-ever (Draft) Work Plan, the Coordination Council recommended:

> On an annual basis, the Council will summarize its progress, and report needs and recommendations, to the Montana Interagency Coordinating Group (or another entity, if this group continues to be defunct). (Action Item #3, MWCC Work Plan Draft, July, 1998)

Some Council members acknowledge the Council might benefit from reevaluating its organization (including a host of working groups attached to it), to see if some reorganization could help it function more efficiently. There is no budget attached to the Council, but one purpose of their Work Plan is to strategize on projects that need some resource commitment to accomplish.

Other water-related mandates (notably bull trout listing and fishery conservation and restoration in general) and limited agency budgets are challenging Montana to be as efficient as possible with limited funds. Mandates between programs have overlapping components. DEQ staff are attempting to better coordinate programs (on a watershed basis) within their agency, and they are coordinating with other staff on a program- and project-specific basis, where practical and where time allows.

Another recent coordination effort involves the State's response to the federal Clean Water Action Plan. According to DEQ staff, under the Action Plan, state and federal agencies are to compare their priorities and identify a list of watersheds that are "high priority" for all or most of the agencies. The agencies are then directed to develop a unified watershed assessment for these watersheds. The department and many other agencies are proceeding slowly on the Clean Water Action Plan until more is known about the level of funding and associated requirements. Also, the watersheds identified for unified watershed assessments will not be identical to the priorities for any of the state and federal agencies. Each agency will need to evaluate the impacts of this dichotomy. For example, DEQ will need to consider how the unified watershed assessment priorities mesh with the TMDL priorities being developed by the department and the Statewide TMDL Advisory Group (STAG).

Potential Policy Issues:

- Is there an advantage to further discussing enhanced interagency coordination schemes for water-related programs in Montana? Is there any reason to evaluate whether the Interagency MOU should expire, be extended, or be modified, before its planned expiration in 1999? Is the current interagency coordination framework in Montana functioning sufficiently well to accommodate current and upcoming challenges? Are there some "turf" issues, resolution of which could benefit budgets, resources, and the public? Are there reasons to explore some examples from other states regarding interagency coordination? Is the Watershed Coordination Council the appropriate entity to spearhead this type of inquiry? Is there a suggested role for the Environmental Quality Council, or some suggestions that can be made for Legislative or future EQC consideration?

- DNRC staff help local groups conduct "watershed planning", which covers water quality issues, but also weeds, wildlife predation, and other topics broader than those that would be TMDL-related. What is the appropriate relationship between local watershed planning efforts and DEQ's water quality improvement planning efforts? How can TMDLs be developed without "eclipsing" the broader efforts and diverting attention from other local community goals?

- Should the Montana Watershed Coordination Council be formalized in statute or otherwise? There has been no consensus of attendees at Council meetings that this should be done, and there are many that feel "another layer of bureaucracy" is not desirable, but it keeps getting suggested. The impetus for the suggestion, it appears, is the need for the Council to increase its legitimacy, so that attendees will commit to attend and contribute to Council products, and so that agency heads will allocate funding when requested by their Council representatives. Are there ways other than MWCC "formalization" that could accomplish the desired objectives of good attendance and contribution, and agency financial support of MWCC products?

- (Other issues related to this topic?)

Options Still Being Considered by the Subcommittee:

- The Subcommittee could recommend the next Council make a priority of coordinating with the Governor's Office to potentially convene the 23 signatories (or their replacements) to allow the Montana Watershed Coordination Council to report to them on their accomplishments and needs, and to determine whether the MOU should be modified and/or extended. This could be done at a Watershed Symposium, but the planned date of that would mean that the Interagency MOU would have already expired.

Or,

- The Subcommittee/Council could take no position on whether the MOU should be extended, allowing others to determine whether it should expire. If it did expire, and the Watershed Coordination Council still wished to report annually to a relevant entity, the Subcommittee could recommend the next Council provide that forum. Or, the Subcommittee could suggest that one set of reporting be done at the Watershed Symposium (presuming these continue), and another to the EQC (resulting in biennial reporting to each).

Subcommittee/Council Recommendations:

1. The Subcommittee will request continued updates from agency staff on the progress being made on Montana's response to the federal Clean Water Action Plan, and what positive or negative effects it might have on interagency coordination in Montana. At the same time, they will request an update on any expected relationship (or "strings") the Plan process results might have on Montanan's ability to access 319, EQIP, CRP, or other funding programs, and when more might be known about this. The Subcommittee could discuss any appropriate Subcommittee/Council action, based upon the information provided.

2. The Subcommittee supports the efforts of the Montana Watershed Coordination Council, and encourages state agencies to dedicate the necessary staff and resources to accomplish Council goals and products. The Subcommittee encourages the completion of specific products and/or services important to Montana (e.g. an annual watershed symposium, watershed group directory, watershed home page on the Internet, directory of funding sources, etc.).

3. Further EQC oversight of the TMDL program (now and next Interim) should focus on seeing that the program is run efficiently and effectively. A positive first step in this type of oversight would be an examination of the myriad of duplicative efforts related to water quality and watershed projects.

Persons Coordinated with in the Development of this Summary (proposed):

Julie Lapeyre -- Policy Advisor, Office of the Governor
Bob Raisch -- DEQ, Resource Protection Planning Bureau
Gary Ingman -- DEQ, Data Management and Monitoring Bureau
Bruce Zander -- EPA, Regional TMDL Coordinator
Clayton Creager -- Tetra Tech
*Montana Watershed Coordination Council, Watershed Linking Work Group
Dick Blodnick -- EPA
Dorothy Bradley -- Montana university System Water Center
*Mike McClane -- DNRC
Gerald Mueller -- Consensus Associates
*Mike Volesky -- Montana Association of Conservation Districts
Rich Moy -- DNRC
*Warren Kellogg -- DNRC/NRCS
*Ken McDonald -- Endangered Species Coordinator, FWP
*Allen Rollo -- Chair, Montana Watershed Coordination Council
Randy Smith -- Big Hole Watershed Committee
Mark Holston -- Flathead Basin Committee
Roxa French -- Bitterroot Water Forum
Mary Ellen Wolfe -- Montana Watercourse
Gary Giem -- Ruby Valley Conservation District
Art Christiansen -- Beaverhead Conservation District
Laurel Holsman -- Montana Watersheds (wrong title...)
*Mark Simonich -- Director, DEQ

*Denotes persons from whom comments were received and incorporated.

Interaction with Tribes/Other States

Background:

General Water Issues. These issues arose in the context of a larger issue: What is the state's policy with respect to its relationships with Indian tribes regarding water? This issue was discussed at the March 12, 1998 Water Policy Subcommittee meeting. A concern expressed by a tribal member was relayed to the Subcommittee. The tribal member noted that the State of Montana's approach to tribes with respect to water issues is inconsistent; negotiation of water rights is encouraged, yet the State has filed a lawsuit against the Confederated Salish and Kootenai Tribes over water quality standards. The Subcommittee noted that state law addresses interactions with Indian tribes regarding water *quantity*, but not water *quality*. (Compact Commission staff have heard concerns along these lines as well.)

The Montana Legislature has established a policy for the state with respect to addressing water rights. Section 85-2-701, MCA declares the Legislature's intent that the state proceed in an effort to conclude compacts for the equitable division and apportionment of waters between the state and its people and Indian tribes. It is the Governor's policy to approach tribes in Montana on a "government-to-government" basis (i.e. as in approaching another state).

The state does not have a policy articulated in law for interacting with tribes on water quality issues. EPA has jurisdiction over waters in Indian Country. The EPA can delegate the authority to establish water quality standards within Indian reservations to eligible tribes.

The State of Montana has asked the U.S. Supreme Court to hear a case regarding whether the Confederated Salish and Kootenai Tribes have the authority to set water quality standards for both tribal and non-tribal entities on the Flathead Reservation. In its petition, the Attorney General contends that a federal appeals court incorrectly granted the Tribes a status equal to that of the state in issuing water quality regulations governing activities of nontribal members, including political subdivisions of the state, on fee lands within the boundaries of the Flathead Reservation. At least 44 percent of the land within the Flathead Reservation is now owned by nontribal members or by state and state governmental entities.

It should be noted that this lawsuit addresses the Tribes' authority to regulate nontribal entities and does not challenge their authority to adopt water quality standards for tribal entities. The Tribes have adopted water quality standards for the southern portion of Flathead Lake and have worked cooperatively with the state to regulate water quality.

According to Attorney General Joe Mazurek, the state felt that cooperation and negotiation was the best approach and had proposed sharing water quality management authority with the tribes. However, the EPA rejected the state's proposal and the state decided to pursue the lawsuit. Mazurek expects the U.S. Supreme Court to decide in early October whether it will hear the case.

There are existing mechanisms for coordination among multiple entities. A *Memorandum of Understanding Establishing a Framework for Cooperation to Sustain Ecosystems, Watersheds and Communities in Montana* (MOU) was signed by 23 local, state and federal agencies in 1994. The framework states that participation by Native Americans in the Interagency Coordinating Group should be sought. The U.S. Bureau of Indian Affairs and the EPA signed this agreement; however, it has not been signed by any of the tribes in Montana. (EQC staff are unaware whether tribes were invited to sign the MOU.)

The Montana Watershed Coordination Council Operating Guidelines list tribal governments as members of the Council. Tribal representatives have occasionally participated in Council meetings.

Implementation of HB 546. HB 546 does not address interactions with tribes. Since watershed boundaries do not coincide with reservation boundaries, a stream or lake may fall under the jurisdiction of both the State and the U.S. Environmental Protection Agency (EPA) or eligible tribes. The EPA and eligible Indian tribes have the authority to identify water bodies in need of TMDL development and to develop and implement TMDL's for water bodies in Indian country. EPA has yet to develop guidance for addressing these water bodies or criteria regarding program authorization for tribes. In the interim, EPA will be responsible for TMDL development for waters in Indian country.

States have two options for developing TMDLs for water bodies in situations when more than one entity has jurisdiction (e.g. tribes, other states, etc.):

1) Request that EPA develop the TMDL.
2) Develop the TMDL cooperatively.

DEQ is cooperating with tribes on several TMDLs for water bodies including Flathead Lake and the Missouri River below Fort Peck Dam. For example, the Flathead Basin Commission (Commission) has developed and adopted a proposed TMDL strategy for Flathead Lake. (The TMDL has not yet been approved by EPA.) A representative of the Confederated Salish and Kootenai Tribes is a voting member of the Commission. The Tribes have also been active in seeking grant funds to pay for implementation of the TMDLs. The Commission does not have a specific agreement with EPA or the Confederated Salish and Kootenai Tribes regarding TMDL development.

HB 546 requires DEQ to establish a statewide TMDL advisory group. The law also requires DEQ to work with local watershed advisory groups in the development of TMDLs. The law specifies interests that must be represented on each of these groups. Tribes are not specifically included.

Other States. A commentor noted that the issue with state/tribal interaction is similar to state/state interaction, and suggested this section be expanded to reflect that. For example, challenges created with waters that are impaired by upstream sources before they flow into Montana, or waters that leave Montana with a lower quality than a downstream state prefers. There are also cases where state standards differ and the same water body is considered impaired in one state but not in the other. Intra-state topics are one reason EPA representatives have been involved in the water quality improvement efforts in the Clark Fork drainage.

Potential Policy Issues:

General Water Issues

- **State policy governing relationships with Indian Tribes regarding water.** The state does not have a policy governing its relationships with Indian Tribes regarding water quality issues. Should the state develop a policy? How should it be developed?

- **Coordination and cooperation between the State and tribes on water issues.** Some mechanisms for cooperation and coordination already exist. However, cooperation and

coordination is inconsistent. The state could consider enhancing or improving the existing mechanisms or establishing a new mechanism. The Water Policy Subcommittee discussed the possibility of enhanced dialogue between state and tribal representatives.

Implementation of HB 546

- **Coordination and cooperation in TMDL development and implementation.** The process for interacting with tribal governments in TMDL development has not been established in state law. Representatives of tribal governments are not required to be included in either the statewide TMDL advisory group or watershed advisory groups. In practice, DEQ promotes the inclusion of all affected interests, including tribes, in TMDL development. Should the state clarify how it will interact with tribes in TMDL development?

Options Still Being Considered by the Subcommittee:

- If no further input is received on this topic, the Subcommittee could eliminate it from further consideration, and pare down or eliminate its coverage in this *Report*. Some discussion of the broader issue could be moved to the "Areas of Concern" section of the *Water Policy Report to the Legislature*, if warranted.

- The Subcommittee could direct staff to check with EPA to see if the national tribal water quality group they coordinate with could provide any resources or suggestions related to these concerns.

General Water Issues

- The Water Policy Subcommittee or the full EQC could coordinate with Governor's Office and tribal representatives to determine whether an enhanced framework or process for addressing water quality issues would be mutually desirable.

- Encourage state agencies to cooperate and coordinate with Indian tribes through existing mechanisms including the Montana Watershed Coordination Council and/or the Interagency Coordinating Group. The EQC could encourage the Executive Branch to solicit tribes to become signatories to the MOU.

- The Subcommittee could recommend developing and adding a policy statement to Montana's Water Quality Act (similar to that in the Water Use Act) regarding the state's intent regarding coordination with tribes on water quality issues.

Implementation of HB 546

- Support DEQ's current approach which involves consulting and cooperating with tribes in the development of TMDLs for watersheds where tribes are affected. Determine whether this policy also applies to other states.

- Consult with tribes as to their position on potentially amending the law to:
  a) include affected tribes in the list of interests that must be represented in watershed advisory groups (75-5-704, MCA) and/or
  b) include affected tribes in the list of interests that must be represented on the statewide

TMDL advisory group (75-5-702 (9), MCA).

Subcommittee/Council Recommendations:

(to be determined based upon issues documented, options suggested and Subcommittee/Council deliberation)

Persons Coordinated with in the Development of this Summary:

*Stuart Lehman -- DEQ, Resource Protection Planning Bureau
*Bob Raisch -- DEQ, Resource Protection Planning Bureau
*John North -- DEQ, Chief Legal Counsel
*Bruce Zander -- EPA, Regional TMDL Coordinator
John Youngberg -- Montana Farm Bureau/Statewide TMDL Advisory Group
Wyman McDonald -- Coordinator, Governor's Office of Indian Affairs
*Mark Holston -- Flathead Basin Commission
Harley Harris -- Assistant Attorney General, Montana
Clay Smith -- Solicitor, Montana Attorney General's Office
Susan Cottingham/*Barb Cosins -- Staff, Reserved Water Rights Compact Commission
Professor John Horwich, University of Montana School of Law
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*Denotes persons from whom comments were received and incorporated.

Implications of the Lawsuit

Background: Friends of the Wild Swan, along with four other citizen environmental groups, filed a lawsuit against the U.S. Environmental Protection Agency (EPA). The suit alleged that EPA violated the Clean Water Act (CWA) by failing to promulgate a list of "threatened" and "impaired" waters for the state of Montana, as required by CWA section 303(d), when Montana did not meet the appropriate deadlines to file such a list; and by failing to promulgate Total Maximum Daily Loads (TMDLs) for each body or segment of water on the "section 303(d) list", as required by the CWA when a state has not made progress toward setting TMDLs. The suit also alleged that EPA violated the Administrative Procedures Act (APA) by approving deficient section 303(d) lists submitted eventually to EPA by the state of Montana--the lists were "deficient" because they represent assessment of only a fraction of Montana streams and fail to identify all "threatened" and "impaired" waters.

The lawsuit requests the court to issue a declaratory judgment that EPA is in violation of the CWA with respect to section 303(d) lists and TMDLs for the state of Montana. The suit also requests the court to mandate EPA to identify and prioritize a section 303(d) list of all "threatened" and "impaired" waters in Montana and to establish TMDLs for those waters on the list within three (3) years from the date of judgment.

When the TMDL lawsuit was filed, the 1997 legislature was in the process of drafting and approving HB 546 -- legislation establishing water quality assessment and TMDL development directives to meet the requirements of CWA section 303. HB 546 became effective on May 5, 1997 and is now codified as MCA sections 75-5-701 to -704. As of August 4, 1998, both sides in the case have filed motions for summary judgement; the deadline for those to be submitted was August 10th. Responses are due in September, and the judge will rule after that on these motions. If the judge denies the motion for summary judgement of either side, he has determined there are enough issues of fact that the case needs to go to court. That ruling would not be likely to come out until late this year or early next year.

According to DEQ staff (as of August 19,1998), the Deep Creek TMDL had been submitted to, and approved by EPA. The department has also submitted a TMDL to EPA for Elk Creek near Noxon and plans to submit the Clark Fork Voluntary Nutrient Reduction Plan to EPA as a TMDL in late August. In addition, over 100 point source TMDLs have been submitted to EPA and many have been approved. The department is also working on packaging approximately 10 nonpoint source (319) projects as TMDLs and submitting them to EPA within the next few months.

What are the implications of the TMDL lawsuit, especially in light of Montana's new statute addressing water quality assessment and TMDLs? As of August, 1998, 33 states have been involved or imminently will be involved in TMDL lawsuits. Pending lawsuits exist in fourteen (14) states (including Montana), notices of intent to sue have been filed in five (5) states, and TMDL lawsuits have been dismissed in three (3) states. In the remaining 11 states, EPA was under court order to establish TMDLs if the states do not establish TMDLs according to a court-approved schedule.

Based on a review of the 11 cases resulting in a court-approved TMDL schedule, the implications for Montana appear to be the following:

(1) If a court finds "constructive submission of no TMDLs", this triggers a mandatory duty for EPA to establish TMDLs for the state. Yet, courts have been very reluctant to find "constructive submission of no TMDLs". Such a finding exists only for the state of Alaska where the state had not completed

"even the first stage of the TMDL process" and did not indicate any interest in doing so in the future.

Because Montana (a) has submitted section 303(d) lists for 1992, 1994, 1996, and 1998, (b) has developed over 100 point source TMDLs, one nonpoint source TMDL, and is currently working on other TMDLs, and (c) has enacted strong TMDL legislation, the state has a good chance of retaining primacy over its TMDL development and promulgation.

(2) In ten (10) of the eleven (11) TMDL lawsuits resulting in court-approved TMDL schedules, the state has retained primacy over promulgation of its section 303(d) list and TMDL development. EPA has retained an oversight and guidance role for the state and will gain primacy over a state's TMDL program only if the state does not establish TMDLs by the court-approved schedule of deadlines. Schedules for TMDL establishment range from four and one-half (4.5) years to twelve (12) years.

If the plaintiffs in Montana's TMDL lawsuit successfully challenge EPA, Montana will likely fall under a similar arrangement as other cases--where the state must establish TMDLs according to a court-approved schedule and EPA will retain an oversight and guidance role. At this point, it is unclear what time frame the court would consider "reasonable" for establishing TMDLs in Montana. The court may defer to the ten (10) year schedule set out in the TMDL statute at MCA section 75-5-703(3), or may set a more accelerated schedule.

(3) In the long term, the most important issue with respect to TMDLs is that concrete progress is actually made toward TMDL development and sufficient funding is allocated to a TMDL program. Even if the plaintiffs in the TMDL lawsuit do not succeed, the state of Montana will be under careful scrutiny from EPA and watchful citizens groups to ensure that Montana's TMDL legislation is being followed.

(4) Keep in mind that the plaintiffs in Montana's TMDL lawsuit may amend their complaint at any time (even during trial), provided the court grants them leave to amend. In the past, courts have been fairly generous with granting leave to amend a complaint if the amendment is within the scope of the cause of action of the original complaint.

(5) Attached to this writeup is a comparative list of all TMDL lawsuits in other states known to EQC staff as of August, 1998.

A commentor suggested that what EQC says, does, and writes (regarding the TMDL program) be closely reviewed by the State's counsel in the TMDL lawsuit. (Note: Early this year, EQC staff conferred with DEQ's Chief Counsel, EQC Counsel, and the Legal Director of Legislative Services regarding potential concerns over EQC conducting oversight on a program that is directly related to pending litigation. Their counsel has been incorporated into the Subcommittee process, and staff continues to be as sensitive as possible to this issue. Also, as noted below, a copy of this writeup (and others) were forwarded to DEQ's Legal Counsel for comment. Any relevant comments received were incorporated. Suggestions for additional reviewers continue to be welcome.)

Potential Policy Issues:

- Though DEQ is still early in its implementation process, are there ways Montana could improve its progress toward TMDL development and promulgation? short term? long term?

- Has Montana allocated sufficient funds to fully implement TMDL development, promulgation, and monitoring? Are those funds being effectively used, to both provide an effective program and facilitate defense of the state program in the lawsuit? (DEQ Response: The TMDL program is an expanding program with gradually increasing costs for the first ten years and decreasing costs after that. The legislature will need to fund these increases in order to implement the proposed program. It is still too early to determine whether the initial funding predictions will be adequate. One concern that was voiced during the 1997 legislative session and continues to be voiced is; there is insufficient funding for conservation districts and watershed advisory groups to participate in the process and develop and implement homegrown watershed management plans and TMDLs. The department acknowledges that several million more dollars could be put to good use in this area. However, such a funding level is not realistic. The department is cautiously following the progress of the Clean Water Action Plan in Congress with hope that the Plan will provide a substantial increase in funding for conservation districts, watershed advisory groups and the department.) (See also the discussions "Funding, Its Use, and the Role of 319 Funds" and "Local Funding for Implementation", later in this document.)

Options Still Being Considered by the Subcommittee:

- The Subcommittee could request a final update at the September Council meeting on the number of TMDLs that are in process or submitted to EPA (Freezeout Lake just submitted?). There has been discussion that many 319 projects just need to be "tweaked" to qualify as TMDLs; how much tweaking is being accomplished?

- The Subcommittee could suggest to DEQ that they consider adding a column to the state's 303(d) list to display "Status of Water Quality Improvement Efforts" (or the like). At this point, state progress on TMDL development is only reflected in the 303(d) list when EPA TMDL approval allows that water (or an impaired parameter of it) to be removed from the list; and the list is only published every two years (possibly less in the future). This misrepresents Montana's progress in developing TMDLs that are not yet approved. Since the list is now available on-line, such information would allow the list to be kept current and be more reflective of TMDL progress. Entries might be as simple as noting which stage the effort is in (e.g. "getting started", "assessment", "planning", or "TMDL for _____ approved -- to be delisted in ____"). If there were only a few major categories for entries, it should not raise too much concern about extra staff time required to input. This might also serve to encourage others to get started on TMDL development, if they see others are progressing.

(Note: Options related to funding are provided in the last two policy consideration summaries.)

Subcommittee/Council Recommendations:

1. The EQC should continue its oversight of the implementation of HB546. Certin specific aspects (e.g. compliance with submitted schedule, etc.) should be revisited to track progress.

Persons Coordinated with in the Development of this Summary (proposed):

*Bruce Zander -- TMDL Coordinator, EPA Region 8
John North -- Chief Counsel, DEQ

John Youngberg -- Chair, Statewide TMDL Advisory Group/Montana Farm Bureau
*John Bloomquist -- Statewide TMDL Advisory Group/Montana Stockgrowers
John Horwich -- School of Law, University of Montana
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Don Allen -- WETA

*Denotes persons from whom comments were received and incorporated.

OVERVIEW OF TMDL LITIGATION

I. TMDL CASES WITH COURT DECISIONS OR CONSENT DECREES

(listed in chronological order based on date of court decision or consent decree)

Lake Michigan
National Wildlife Federation v. Adamkus (1991)

Complaint: Plaintiffs contended insufficient TMDL development by states bordering Lake Michigan constituted constructive submission of no TMDLs.

Facts: Wisconsin had identified four areas of Lake Michigan for TMDL development. EPA approved state determinations in 1985.

Result: Court rejected plaintiff's contention because actual submissions for TMDL development had been made by Wisconsin and approved by EPA.

Alaska
Alaska Center for the Environment v. Reilly (1991)

Complaint: Constructive submission of no TMDLs.

Facts: All parties agreed that no TMDL had ever been submitted to EPA for Alaska. The court also found that Alaska had not completed "even the first stage of the TMDL process."

Result: Alaska had constructively submitted no TMDLs. Court ordered EPA identify § 303(d) list water segments and initiate process of establishing TMDLs for Alaska.

Minnesota
Sierra Club v. Browner (1993)

Complaint: Constructive submission of no TMDLs and therefore, EPA had a mandatory duty to establish a list of water quality-limited segments and accompanying TMDLs for Minnesota waters.

Facts: Minnesota had submitted several lists of waters to EPA, although EPA disapproved these lists and established its own list. State was currently working on TMDLs for six § 303(d) list water segments with schedules ranging from 1 year to 9 years for completion.

Result: State's activities precluded finding of constructive submission.

Columbia River
Dioxin/Organochlorine Center v. Rasmussen (1995)

Complaint: TMDL for dioxin established by EPA for the Columbia River was unreasonable and inadequate.

Facts: unknown

Result: Court upheld the TMDL.

Idaho
Idaho Sportsmen's Coalition v. Browner (1996)

Complaint 1: EPA's approval of Idaho's § 303(d) list was arbitrary and capricious.

Facts: unknown

Result 1: Court found that Idaho's § 303 (d) list improperly omitted waters identified in the State's 1992 § 305(b) report and failed to consider information available from the U.S. Forest Service. Court ordered EPA to establish a § 303(d) list for Idaho.

Complaint 2: Idaho had constructively submitted no TMDLs.

Facts: Idaho had submitted two TMDLs and was developing 29 TMDLs and other pollution control strategies.

Result: State's activities precluded constructive submission, but EPA had violated a "duty" and acted arbitrarily and capriciously by not establishing a reasonable schedule with Idaho for TMDL development. EPA and Idaho then agreed on an 8-year schedule.

Georgia
Sierra Club v. Hankinson (1996)

Complaint: Constructive submission of no TMDLs

Facts: Georgia had made "some TMDL submissions", although the court found them "totally inadequate".

Result: Constructive submission precluded, but EPA's failure to disapprove Georgia's inadequate TMDL submissions was arbitrary and capricious and a violation of the Administrative Procedures Act. Eventually, the parties signed a consent decree that set out a schedule for Georgia to establish TMDLs in each of its watershed

basins within 1 year to 8 years. EPA would establish TMDLs if Georgia did not meet the schedule deadlines. EPA would also regularly review Georgia's continuing planning process and TMDL program.

California (North Coast)
Pacific Coast Federation of Fishermen's Associations v. Marcus

Complaint: unknown

Facts: unknown

Result: Plaintiffs and EPA signed a consent decree that sets out an 11-year schedule for California to establish TMDLs for 17 rivers along the north coast. EPA will establish TMDLs if California does not meet schedule deadlines.

Pennsylvania
American Littoral Society v. EPA (1996)

Complaint: unknown

Facts: unknown

Result: Consent decree sets out a 12-year schedule for establishment of TMDLs for all waters on Pennsylvania's 1996 § 303(d) list (approximately 575 waters). EPA will establish TMDLs if Pennsylvania does not meet schedule deadlines. EPA will also develop regional guidance on § 303(d) listing and review Pennsylvania's continuing planning process.

Arizona
Defenders of Wildlife v. Browner (1996)

Complaint: unknown

Facts: unknown

Result: Consent decree requires establishment of TMDLs for mercury on 11 § 303(d) list waters in four and one-half years. EPA will establish TMDLs if Arizona does not meet schedule deadlines.

New Mexico
Forest Guardians v. Browner (1996)

Complaint: unknown

Facts: unknown

Result: Consent decree sets out a 10-year schedule for establishment of TMDLs for 61 specified waters on New Mexico's 1996 § 303(d) list. TMDLs must be established for remaining waters on the 1996 list within 20 years. EPA will establish TMDLs if New Mexico does not meet schedule deadlines.

West Virginia
Ohio Valley Environmental Coalition, Inc. v. Browner (1995)

Complaint: unknown

Facts: unknown

Result: Consent decree sets out a 10-year schedule for establishment of TMDLs for over 500 specified § 303(d) list waters. EPA will establish TMDLs if West Virginia does not meet the schedule deadlines.

Delaware
American Littoral Society v. EPA (1994)

Complaint: unknown

Facts: unknown

Result: Consent decree sets up a 10-year schedule for establishment of TMDLs for all waters on Delaware's 1996 § 303(d) list. EPA will establish TMDLs if Delaware does not meet schedule deadlines. EPA will also evaluate and make recommendations regarding Delaware's monitoring and assessment program for TMDLs, and will review Delaware's continuing planning process.

California (Newport Bay)
Defend the Bay, Inc. v. Marcus (1996)

Complaint: unknown

Facts: unknown

Result: Consent decree sets out a 4-year schedule for establishment of TMDLs for specified pollutants and waters in Newport Bay, California. EPA will establish TMDLs if California fails to meet schedule deadlines.

Washington
Northwest Environmental Advocates v. Browner (1991)

Complaint: unknown

Facts: unknown

Result: Consent decree sets out a 5-year schedule for establishment of 38 TMDLs. EPA will establish TMDLs if Washington fails to meet schedule deadlines. Parties also signed a settlement agreement which sets out a 15-year schedule for establishing TMDLs for all waters Washington's 1996 § 303(d) list. EPA will establish TMDLs if Washington does not meet the schedule deadlines.

II. PENDING TMDL LITIGATION

(listed in chronological order based on filing date)

Kansas
Kansas Natural Resources Council, Inc. v. Browner (1995)

Relief sought: Court order directing EPA to disapprove Kansas' § 303(d) list and to establish lists and TMDLs for Kansas. Court order directing EPA to withdraw its approval of Kansas' NPDES permit program and stop all Kansas NPDES permitting until EPA has approved an adequate continuing planning process for Kansas.

New Jersey
American Littoral Society v. EPA (1996)

Relief sought: Court order directing EPA to disapprove New Jersey's TMDL list and continuing planning process. Court order directing EPA to establish a TMDL list and TMDLs and to withdraw New Jersey's NPDES authorization if the state fails to adopt an acceptable continuing planning process.

Louisiana
Sierra Club v. Saginaw (1996)

Relief sought: Court order directing EPA to establish a § 303(d) list for the state, establish TMDLs for all waters on the list, and establish a schedule for TMDL submissions.

Oregon
Northwest Environmental Advocatev. Brownerer (1996)

Complaint: EPA's approval of Oregon's 1994-96 § 303(d) list was arbitrary and capricious. EPA failed to approve or disapprove TMDLs submitted by Oregon within 30

days.

Relief sought: Court order directing EPA to establish a TMDL schedule for Oregon. Court order requiring EPA to disapprove Oregon's continuing planning process and NPDES program.

Wyoming
Wyoming Outdoor Council v. Browner (1996)

Complaint: EPA's approval of Wyoming's 1992 and 1994 § 303(d) lists was arbitrary and capricious, and EPA has failed to approve or disapprove of Wyoming's 1996 list.

Relief sought: Court order directing EPA to establish a § 303(d) list for Wyoming and to establish TMDLs for all waters on that list.

North Carolina
The Neuse River Foundation, Inc. v. Browner (1996)

Relief sought: Court order directing EPA to establish TMDLs for the Neuse River within 60 days and to establish TMDLs for all other § 303(d) list waters within 5 years. Court order directing EPA to "implement and enforce" all TMDLs.

Montana
Friends of the Wild Swan, Inc. v. Browner (1997)

Relief sought: Court order directing EPA to establish TMDLs for all § 303(d) waters in Montana within 3 years and to implement a monitoring program to comply with the CWA.

Alabama
Mudd v. Hankinson (1997)

Relief sought: Court order directing EPA to establish a TMDL schedule and develop TMDLs for all § 303(d) list waters in Alabama.

Colorado
Colorado Environmental Coalition v. EPA (1997)

Complaint: Colorado's failure to establish TMDLs for all § 303(d) list waters amounts to constructive submission of no TMDLs. In addition, EPA's approval of TMDLs in Colorado was arbitrary and capricious.

Relief sought: Court order requiring EPA to establish TMDLs for all § 303 (d) list waters in Colorado.

Maryland
Sierra Club v. EPA (1997)

Relief sought: Court order vacating EPA's approval of Maryland's 1996 § 303(d) list and requiring EPA to establish a § 303(d) list for Maryland. Court order directing EPA to establish TMDLs for all § 303(d) waters in Maryland.

Oklahoma
Hayes v. Browner (1997)

Relief sought: Court order directing EPA to establish TMDLs for all § 303(d) list waters in Oklahoma by December 1999.

Mississippi
Sierra Club v. Hankinson (1997)

Relief sought: Court order directing EPA to establish TMDLs for all § 303(d) list waters in Mississippi.

District of Columbia
Kingman Park Civic Association v. U.S. Environmental Protection Agency (1998)

Relief sought: Court order vacating EPA's approval of the District of Columbia's 1996 § 303(d) list and requiring EPA to establish a § 303(d) list for the District of Columbia. Court order directing EPA to establish and implement TMDLs for all § 303 (d) list waters in the District of Columbia and to monitor all unmonitored waters in the District. Court order requiring EPA to report its progress to the plaintiffs and the court.

III. STATES WITH NOTICES OF INTENT TO FILE CITIZEN SUITS

Alabama
Florida
California (Los Angeles region)
Virginia
South Dakota

Local Involvement vs. Mandatory Timeframe

Background: The roles and responsibilities envisioned in HB546 are intertwined and, subsequently, complex. A summary of what appears to be envisioned, from a literal interpretation of the bill, is provided in the table beginning on the next page. As shown, a literal interpretation of the bill shows DEQ as the entity receiving the bulk of the direction and mandates. Local entities (CDs, and invited and other interested persons) are described in a consultation role.

The mandates of HB546 are being implemented by DEQ via two bureaus. According to DEQ's *Schedule for the Development of TMDLs* (submitted to the Legislature, via EQC, on May 7th, 1998), the Monitoring, Assessment and Data Management Bureau is handling the requirements related to the data and decisions needed to manage, update, and submit the 303(d) list to EPA. They are also dealing with the data management system, developing criteria for what type and level of data is required to list a water body, determining the relationship between water quality standard exceedences and support of beneficial uses, and responding to petitions to list/delist/or reprioritize waters.

The Resource Planning Bureau of DEQ developed the TMDL implementation schedule, and have taken responsibility for developing and implementing a communication/information strategy for the program, developing TMDLs, and managing the DEQ's portion of the federal grant program for nonpoint source pollution (NPS) control projects (the "319" program).

Both bureaus will collaborate on the tracking of TMDLs, the prioritization of water bodies, public involvement in ranking and prioritization, and the development of a list of waters for site-specific water quality standards.

Recognizing that any changes in land use required to improve water quality may best be facilitated by decisions at the local level, DEQ's approach to TMDL development has been to advocate a process that "encourages local leadership in the development of water quality plans, offers as much individualized technical assistance as possible, customizes flexible solutions for each individual watershed, and delists water bodies when an approved plan is being implemented."

DEQ's *Schedule* envisions the development and DEQ approval of 100 TMDLs for listed waters by October of 1999, 300 more by July of 2003, and another 400 by July, 2007. As of this writing, TMDLs for one water body (Deep Creek) have been submitted and approved by EPA. EPA staff note that over 100 point-source-related TMDLs have been approved by EPA (associated with MPDES permits). They add that Montana is continuing to make substantial progress in completing point-source-based TMDLs, and the state is committed to accentuated efforts in the TMDLs that are necessary to remove water bodies from the matrix portion of the 303(d) list.

The DEQ's *Strategy to Improve and Protect Water Quality Using a Watershed Approach* (November, 1997) describes a four-step process to developing and implementing water quality plans, with DEQ involvement provided on an "as requested" basis. The process applies to"groups interested in developing TMDLs". The process is described as follows:

Assessment	Groups interested in developing TMDLs can start with data that was used to put the water body on the threatened or impaired waters list. Or, local groups can supplement this data with water quality evaluations and monitoring of their own., Technical assistance is available from DEQ and may also be provided by other agencies.

Who...?	Is Supposed to Do What...?
Montana Department of Environmental Quality (DEQ):	a. monitor state waters to assess quality b. identify waters that are threatened or impaired c. review and revise the 303(d) list and priorities at least every 5 years d. develop and implement a method to prioritize TMDL development for listed waters e. make information available to the public f. review and make determinations on requests to add/remove/reprioritize listed waters g. provide for public comment on actions "c" and "f" h. consult with CDS and watershed advisory groups during actions "c" and "o" i. develop (by 10/1/99) and maintain a database to assess data used in the listing and prioritization processes j. use the database in "i" to delist water bodies lacking sufficient credible data k. monitor and assess (the next field season, or ASAP) any waters delisted via "j" to determine if threatened or impaired l. establish and consult with Statewide TMDL Advisory Group (STAG) during "d"; solicit, document, and consider public comment during deliberations m. validate data for any water bodies determined as "high" priorities for TMDL development n. develop TMDLs for threatened or impaired waters, in order of priority; by May, 2007, develop TMDLs for those waters listed in 1996 that are still on the list after action "i" is completed o. develop reasonable land, soil, and water conservation practices (BMPs) and assist and inform landowners about voluntary application of them; support a voluntary program of these practices to achieve water quality standards for waters with TMDLs p. develop a schedule (by 5/5/98) for completing "n" q. provide guidance for TMDL development on any listed water (regardless of priority), if resources are available to develop the TMDL and monitor its effectiveness r. review and approve/disapprove TMDLs s. provide assistance and support to landowners, CDS, and watershed advisory groups related to how to improve quality of a listed water and eliminate the need to develop a TMDL for it t. incorporate approved TMDLs into DEQ planning and discharge permitting u. develop a monitoring program to determine whether problems have been corrected and the long-term effectiveness of the control measures; if the TMDL is not effective within 5 years, determine if better BMPs are needed, more time is needed, or the TMDL should be revised v. continue to issue discharge permits on listed waters, if certain criteria are met w. request participation of representatives of 14 interest groups to work in an advisory capacity with DEQ and local CDS on "c", "n", and the development portion of "o", above x. set up meetings with watershed advisory groups (including persons other than those "requested" in "w") to review and revise the list and solicit new information (prior to meeting w/STAG), and to develop TMDLs
Person requesting the addition/removal/reprioritization of a listed water (requestor)	a. provide information to support the request b. appeal to board if aggrieved by the department's decision on request

Who...?	Is Supposed to Do What...?
Persons requested by department to work with CDs to advise DEQ	(Note: These are persons whose participation is requested by DEQ to work in an advisory capacity with local CDS and DEQ in the areas noted below. Their participation is not mandated by the bill. These persons are to represent 14 different interest areas (somewhat similar interest areas as those represented by the STAG).) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and local CDS within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment
Statewide TMDL Advisory Group (STAG):	a. advise the department on their consideration of 13 specific criteria in the development of a method of rating listed waters, to then prioritize them for TMDL development
Other groups of persons wishing to participate in revising and reprioritizing the list and in developing TMDLs	(Note: This definition is broader than for those persons "requested" to advise the DEQ and CDS pursuant to 75-5-704(1), but the potential role is the same. These persons, together with the "requested" participants, above, constitute "watershed advisory groups" as defined in the statute.) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and CDS within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment
Local Conservation Districts (CDS):	(Note: CD actions are not mandated by the statute; DEQ must "consult" with them, providing the following opportunities for CD involvement) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and watershed advisory groups within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment

Planning	Develop a watershed water quality plan, using assessment data, agency expertise, landowner knowledge, and public input from other watershed residents. Set specific/ measurable water quality or habitat quality goals, target the most important sources of pollution, identify responsible parties (including any point sources), identify resources or funding, and set time lines.
Implementation	Use best Management Practices (BMPs) or other methods to control pollution from the most important sources identified in the plan. Funding necessary for the BMPs can come from a variety of sources. The degree to which funding is found is often related to the strength of the partnership developed to assess and write a water quality plan.
Monitoring	Monitoring is critical to determine if water quality goals are being met. This data can be collected by agency participants or watershed residents. DEQ and other agency staff can provide technical assistance with this part of the TMDL process. If water quality goals are not met, the information can be used to revise the water quality plan, if necessary.

There appears to be strong and broad agreement that local involvement is key to an implementable and successful water quality improvement strategy (and eventual de-listing of threatened and impaired waters). There may be, however, some lack of clarity (or inconsistency in communication) regarding roles, responsibilities and resources for TMDL development (especially related to areas where the major players will be Conservation Districts and local residents) the resolution of which could speed TMDL development on a statewide basis.

There also seems to be a somewhat wide spectrum of how the state/local split within the TMDL program is described, including that HB546 is a "a voluntary bill," that TMDL development is "a voluntary, locally-led process," and "DEQ provides technical assistance, and the locals do the work." Granted, casual referrals to programs do not often match statutory language, and there are some implementation advantages to describing programs in a "friendly" mode, but the state/local balance described appears quite different than that documented in statute. In some areas, DEQ has taken leadership in conducting assessments; during the EQC's June HB546 implementation tour, it appeared that local entities would conduct assessments, identify problems, etc., and DEQ was available to help. (DEQ Response: Where a local group is interested in performing water quality monitoring or assessments, the department will provide technical assistance, but turn the reins over to the group. In other situations, the local group may want the department to perform the monitoring. In the near term, the department must perform numerous assessments to facilitate the 1999 listing/delisting process.) It is unknown if DEQ has produced guidance on how to conduct an assessment that would provide an adequate foundation for a potentially-approvable TMDL.

MACD representatives note that they intend to discuss with DEQ the role of Conservation Districts in the TMDL program, including the process and roles related to listing and delisting of water bodies. They add that the TMDL topic has become important to districts.

DEQ staff note that they are in the process of developing a TMDL information program, and expected to be implementing it with Conservation Districts in summer and fall.

A commentor on this section provided an example of TMDL development in a local context with a state mandate. She notes that approximately 10 listed water bodies in the White River area of Washington State were addressed by being grouped, with all interested parties (including tribes) deciding on a process and negotiating in a consensus manner the TMDL allocations for the White River. Professional mediators assisted the process, and the agreement was recently signed. She notes that Washington was operating

under a court-ordered timeframe, and the appropriateness of such a process would depend on the participant's willingness to engage in it, and DEQ's ability to fund some major share of it.

(Note: Readers interested in this topic may also wish to review the discussion of "Local Funding for Implementation", found elsewhere in this report, which discusses areas where local or regional entities have taken on the responsibility for developing TMDLs, but have not received additional resources to do so.)

Potential Policy Issues:

- Has the state/local role in water quality monitoring, assessment, and TMDL development and implementation been appropriately defined and described to facilitate effective state movement toward meeting the 10-year TMDL development timeframe envisioned in statute? Are there opportunities for improvement? Is any difference between roles envisioned in statute and roles promoted in implementation acceptable, or should the statute be modified to reflect a different set of relationships?

- The approach to watershed advisory groups in the statute is a bit convoluted; could it be improved, or is it working just fine for DEQ? CDS are concerned that there is promotion of the formation of new groups, when the groups that stay around the longest and get the most done are attached somehow to CDS; could the statute be improved to address this, or can these issues be worked out informally? Others express concern that Conservation Districts are not always broadly representative of the interests in their geographic area, especially in urban areas.
  (DEQ Comment: The department acknowledges that conservation districts are an excellent focus for TMDL development and will depend upon them in probably the majority of cases. Furthermore, many watershed groups will chose to use a conservation district as the umbrella for their group to provide administration and financial management. However, in some cases other organizations such as the Tri-State Implementation Council are well-established and have demonstrated the ability to handle grant money and develop a TMDL. The department intends to also depend on such organizations. ... HB546 was drafted with (its) references to local watershed groups in recognition that, in many instances, local individuals will be organizing themselves in order to develop TMDLs in their local area. This is not meant to diminish the involvement of Conservation Districts in any way, rather to simply ensure that local involvement is completely provided for.)

Subcommittee/Council Recommendations:

1. DEQ should provide an update on the progress and content of their information program to be implemented with Conservation Districts this summer and fall, including how the discussions with MACD on state/local roles will be described. Based upon this information, the Subcommittee could recommend continuance of efforts in this regard, if appropriate.

2. When EQC oversight of HB546 implementation began, one suggestion DEQ staff made was EQC assistance in information and education. In this regard, EQC and DEQ staff have been coordinating since early this year on how the Subcommittee's *Oversight Report* could be crafted to both meet Subcommittee/Council goals, as well as provide an informational resource for future DEQ/EQC use. Presuming this continues to be the DEQ and EQC interest, DEQ (and others) should provide further suggestions on how this effort could assist their informational efforts and contribute to clarifying

state/local roles. It appears from the recent grant funding response from EPA that EPA's focus was on development of specific TMDLs, not on funding statewide informational materials. (Note: DEQ staff already suggested that EQC prepare a booklet on TMDL case studies -- this *Report* is intended to include 4, but more could be drafted next Interim, given supporting resources, interest, and EQC/DEQ priorities.

Persons Coordinated with in the Development of this Summary (proposed):

Stuart Lehman -- TMDL Coordinator, DEQ
*Bruce Zander -- TMDL Coordinator, U.S. EPA Region 8
*Mike Volesky -- Montana Association of Conservation Districts
Steve Schmitz -- Conservation Districts Bureau Chief, DNRC
Mike McLane -- Watershed Planner, DNRC
Clayton Creager -- Tetra Tech
Mark Holston -- Governor's Office/Flathead Basin Commission
*Gerald Mueller -- Consensus Associates
*Nedra Chandler -- Montana Consensus Council
Pat Hettinger -- Lewis and Clark County Water Quality Conservation District
Laurel Holsman -- Natural Resources Program Management
Larry VanRinsum -- Executive Director, Montana Watershed Inc. (from Mark Holston)
*Alan Rollo -- watershed consultant/Chair, Montana Watershed Coordination Council
Watershed Symposium attendees expressing interest in local roles
Warren Kellogg -- DNRC
Don Allen -- WETA
*Mark Simonich -- Director, DEQ

* Denotes persons from whom comments were received and incorporated.

Funding, Its Use, and the Role of 319 Funds in Program Implementation

Background: Most of the following background information and related attachments were provided by DEQ staff.

Montana's Nonpoint Source and Total Maximum Daily Load (TMDL) programs work together to improve water quality and insure that impaired water bodies meet water quality standards and that beneficial uses are restored. These programs consist of staffing at the Department of Environmental Quality and a grant program to local conservation districts, watershed advisory groups and other organizations.

The Department's staff are responsible for conducting water quality monitoring, assessment, and reporting; conducting 401 certifications and 3A authorizations for projects that affect lakes or streams; promoting nonpoint source compliance; providing outreach to conservation districts and watershed advisory groups to assist them in developing and implementing TMDLs; and providing administrative support. During FY98, the Department concentrated on hiring the 9 FTEs authorized by the 1997 legislature, establishing monitoring protocols, defining sufficient credible data, developing criteria for assessing water quality standards attainment, establishing a schedule and work plan for TMDL development, appointing and working with the Statewide TMDL Advisory Group to develop a prioritization scheme for TMDL development, updating the 303(d) impaired waters list, processing petitions for delisting, outreach activities with conservation districts and watershed advisory groups and completing ongoing TMDLs such as the Clark Fork Voluntary Nutrient Reduction Plan and the Flathead Lake TMDL. Starting this summer DEQ's focus will shift to water quality monitoring and assessments and initiating and completing additional TMDLs. To accomplish these activities the Department was authorized to spend $1,983,377 in state and federal funds for the FY98-99 biennium.

The grant program consists of financial awards to conservation districts, watershed advisory groups, and other organizations to improve water quality or riparian habitat and to develop TMDLs. The grants provide funding to administer local watershed projects, conduct water quality monitoring, pay for sample analysis, perform watershed assessments, provide information and education on nonpoint sources and best management practices, evaluate the effectiveness of best management practices, develop watershed plans (TMDLs) and for on the ground implementation of the plans. $1,584,000 of federal funds are available for the grant program during the FY98-99 biennium.

The Department has recently awarded 7 grants to local conservation districts, 1 grant to DNRC, and 1 grant to the Montana University System under the Nonpoint Source program (319) for FY 98. The grants are for 3-5 years and total $667,214. Attachment 1 summarizes each grant. Since 319 projects usually extend over a 3-5 year period, there are numerous active projects currently being funded out of prior year Nonpoint Source funds (319). Attachment 2 is a listing of ongoing projects that in many cases will lead to TMDLs.

Tables 1 and 2 of Attachment 3 describe the current funding and expenditure levels for the Department's program and the grant program. For the FY98-99 biennium, the program is funded with $2,618,611 of federal Nonpoint Source funds (Section 319 NPS) and $948,766 of State General Funds. Since the Department is in the middle of the executive planning process and has not finalized its proposed budget for the FY00-01 biennium, DEQ is unable to provide detailed projections for future years. However, attached is the 1997 fiscal note for House Bill 546 and a budget (Attachment 4), developed for the 1997 legislature that describes the TMDL program as a developing program with increasing costs over the next

ten years.

It should be noted that the Department's expenditures for FY98 are well below the appropriation level. It has taken a substantial amount of time to hire staff resulting in savings in personal services and operating costs. Now that we are reaching full staffing levels expenditures will increase. Additional increases in operating costs are projected due to travel (collecting samples, performing assessments, and Statewide TMDL Advisory Group meetings) and laboratory expenses for sample analysis.

At the August 4th Water Policy Subcommittee meeting, attendees requested a matrix summarizing the above appropriation, budget, and expenditure information, and information on how federal 319 funding is involved. EQC staff coordinated with DEQ budget staff to provide the summary information in Table __ (next page).

Other Department Programs that Partially Support TMDL Development. The Department receives grants from EPA under Section 106 of the federal Clean Water Act for a variety of water quality activities. The Department receives approximately $495,515 annually which is used to determine the effects of proposed mines and energy development, review environmental assessments and environmental impact statements, develop and interpret water quality standards, conduct rulemaking, make nondegradation determinations, perform water quality monitoring, process water quality data, and provide for wellhead and ground water protection. Many of these activities indirectly support TMDL development.

The Department receives grants from EPA under Section 604 (b) of the federal Clean Water Act to carry out water quality management and planning activities. The Department receives approximately $100,000 annually which is used to support statewide water quality status and trends monitoring, preparation of a biennial statewide water quality assessment report, and maintenance of a related water quality assessment data base. 604(b) funded water quality data collection and assessment activities contribute to the Department's development of the 303(d) impaired waters list.

Historically, the Department has also received special grants from EPA under Section 104 (b)(3) of the federal Clean Water Act for various activities such as wetlands protection, water quality monitoring, and watershed management. Watershed projects in the upper and lower Ten Mile Creek and the Bitterroot drainages are currently being funded through Section 104 grants. These projects are locally managed and are expected to result in TMDLs.

Potential Additional Funding for the Nonpoint Source Program. In June, the Department submitted a proposal to EPA for $161,300 of federal funding to support small projects leading to TMDL development. The proposal included 12 individual projects, 7 of which were grants to local conservation districts, watershed groups, and water quality districts to assist in TMDL development. Recently, EPA informed us that they intended to fund 7 project for a total of $80,000 (see attachment 5). All of these projects involve grants to local organizations. The Department is now in the process of submitting an official grant application to EPA.

The Department is also tracking the status of the President's Clean Water Action Plan as it progresses through Congress. If additional funds become available through the Action Plan, the Department intends to submit a grant application to EPA requesting the funds for TMDL development. Effort related to the

Table __. Summary of TMDL/319 Funding Information

NPS/TMDL Program -- Biennium:	
General fund appropriations	$948,766
Portion of 319 appropriated by Legislature to DEQ to "directly address TMDLs" (20.4% of total biennial 319 funds appropriated by Legislature)	$507,600
"NPS Staffing and Support" grant monies from EPA (also from 319)*	$527,011
Total biennium Legislatively appropriated NPS/TMDL program funds	$1,983,377
(Note: 319 funds represent 53.3% of the biennial NPS/TMDL program budget)	
319 Grant monies originally appropriated to DNRC in 1997) (targeted by 1997 Legislature toward benefitting impaired streams):	
319 portion appropriated by Legislature	$1,976,548
319 appropriation revision	134,463
(less "staffing and support" portion of 319 listed above)	(527,011)
Total grant-related 319 funds expected for biennium	$1,584,000
(Note: the project-related funds available account for approximately 60.1% of total 319 funds granted by EPA to Montana for FY98-99)	
Grand Total (General Fund (TMDL) + EPA 319 "NPS Staffing and Support" Monies + 319 Grant Monies for 1998-99 Biennium):	**$3,567,377**
NPS/TMDL Program Annual Info ($1,983,377 expected for biennium):	
FY98 Program Budget:	
General Fund	$444,832
319 (TMDL)	253,800
319 (NPS staffing/support)	375,000
Total FY98 TMDL-Related Program Budget	$1,073,632
FY98 Program Expenditures	
General Fund	$294,064
319 (TMDL)	178,000
319 (NPS staffing/support)	296,591
Total FY98 TMDL-Related Program Expenditures	$769,017
FY99 Remaining Program Appropriation	$1,214,360
319 Grant Funds ("to the ground") Annual Info ($1,584,000 expected for biennium):	
1998 319 Project Grant Monies Allocated in FY98	$667,214
Project Grant Monies Allocated in FY97	179,699
319 funds available for FY99	737,087

Biennial Budget Estimates** (does not include 319 "NPS staff/support" @ approx $750,000/biennium):

FY 98-99	FY00-01	FY02-03	FY04-05	FY06-07
1,456,366	1,718,660	1,810,953	1,840,644	1,851,056

Notes:

* The 319 NPS Staffing and Support funds are used for; (1) water quality monitoring, assessment, and reporting; (2) TMDL outreach; (3) administrative support; (4) 401 certifications/3A Authorizations; and (5) promoting NPS compliance. The latter two activities are carried out by DEQ's permitting/compliance divisions and account for about 32% of the use of these funds.

** From 10-Year Plan prepared in January, 1997 (see "TMDL Budget Summary", attached).

Sources: EQC/DEQ staff, September 1, 1998.

Clean Water Action Plan is heating up. As of August 5th, EPA information showed a president-requested increase of $95 million in 319 funds, with the Senate supporting a $75 million increase and the House supporting the full $95 million requested increase. The 1998 enacted level of 319 funding was $105 million, so funding the requested amount would approximately double the amount of 319 funds available nationally. Other water-related federal funds are proposed for increases as well (see last attachment).

Any state not submitting a "Unified Watershed Assessment" would forfeit the ability to apply for any additional funds, and the full increase would be divided among states that submitted Assessments. According to recent guidance (August 18, 1998), states must complete their a "Unified Watershed Assessment" and their "Watershed Restoration Priorities" by October 1, 1998. There appears to be a tie between new funding (i.e. over the "base" 319 funding) and "nine key elements" provided to states in 319 guidance in May 1996. EQC staff did not have access to this document at the time of writing, but can pursue if the Subcommittee wishes.

Other State and Federal Actions Assisting TMDL Development. In addition to the Nonpoint Source and TMDL programs described above, the Department and other state and federal agencies have other programs and projects underway that directly or indirectly support the TMDL effort. Although, the Department cannot provide the actual financial information for these projects, we have identified many of the programs below:

1. **Department of Environmental Quality:** Conducts water quantity and quality monitoring and improves water quality and riparian habitat conditions through the following programs: (a) abandoned mines reclamation, (b) Montana Pollution Discharge Elimination System permits, (c) Comprehensive Environmental Response Compensation Liability Act (Superfund), and (d) Comprehensive Environmental Cleanup and Responsibility Act (CECRA or state Superfund).

2. **Department of Natural Resources--Reclamation and Development Grant Program:** Provides grants for watershed improvements that directly and indirectly improve water quality.

3. **Department of Fish, Wildlife, and Parks:** Conducts aquatic life and fish surveys and improves water quality and riparian habitats through the Bull Trout Recovery Plan, West slope Cutthroat Recovery Plan, Future Fisheries Program, and other fisheries improvement programs.

4. **U.S. Natural Resource Conservation Service–Environmental Quality Incentive Program:** Provides grants for many different conservation programs ranging from noxious weed control to water quality improvement.

5. **U.S. Forest Service:** Conducts water quantity and quality monitoring and erosion control projects that improve water quality by improving timber and grazing practices, improving riparian habitat, stabilizing stream banks, and reducing erosion.

6. **U.S. Bureau of Land Management:** Conducts water quantity and quality monitoring and erosion control projects that improve water quality by improving timber and grazing practices, improving riparian habitat, stabilizing stream banks and reducing erosion.

7. **The U.S. Bureau of Reclamation, DNRC's Division of State Lands, Montana Department of Transportation** and the **U.S. Corp of Engineers** also conduct projects that improve water quality.

Potential Policy Issues:

- Are current funding sources, levels, and allocations appropriate to effectively achieve the mandates of HB546? Should they be continued or modified? Does the information need to be expressed differently to adequately describe the TMDL-related funding scenario? The above information does not discuss expected funding beyond this biennium; would such information be helpful?

  DEQ Comment: During the 1997 Legislative Session the department proposed funding the TMDL program with general fund (40%) and federal 319 funds (60%). Prior to recommending the use of 319 funds, we obtained verification from EPA that nonpoint source TMDLs were an appropriate use of 319 funds. Although the department was flexible in regard to the funding sources for TMDLs, we were adamant that if HB546 were enacted, it must be funded. Ultimately, the legislature, on its own initiative, decided to decrease the percentage of 319 funds to 40%.

  The department agrees that additional funds could be put to good use by the conservation districts and watershed advisory groups. In fact, we have no doubt that several 20 million more dollars could be put to good use. Obviously, such funding levels are not reasonable. The department is cautiously following congressional action on the Clean Water Action Plan to determine whether it is a potential source of funds for conservation districts and watershed advisory groups. However, the department cautions that it is unrealistic to expect the TMDL program to proceed on schedule without adequate funding at both the local and state level.

- Is it appropriate to use funds that have traditionally been used for projects for staffing, rather than allocating general funds to support the FTEs authorized? (MACD concern)

Options Still Being Considered by the Subcommittee:

- The Subcommittee could suggest a position be taken on funding amounts and allocations, and the role of 319 funds, including whether 319 funds should be supporting staff expenses. The Subcommittee could also initiate a dialogue at its September meeting regarding alternative funding scenarios. Options might include:
  1) The status quo (general fund + approx. $500,000 of 319 directed to the TMDL program).
  2) Discontinue the 319 appropriation (approx. $500,000 per biennium) to the program; make up program funds with general fund monies.
  3) The status quo with an additional ($500,000) request of the "223" funds to go to conservation districts to make up for the 319 money going directly to the TMDL program.
  4) The status quo, plus wait until more is known about potential increase in 319 funds to Montana via the Clean Water Action Plan (this may more than make up for the "diversion" of concern)
  5) EQC staff could check on the potential availability and applicability of BPA "fish and wildlife" grant funds as a potential replacement for 319 project monies "diverted".
  6) New funding sources for watershed efforts could be investigated, including a conservation license plate fund, etc. (Note: The last legislative proposal in this regard, purportedly, wouldn't have generated enough to make up for the "diversion" of concern.)

  Note: These options do not address the grant-related portion of the 319 funds and whether they should continue to be directed to benefit "listed" waters.

- DEQ Suggestion: The department would like to see consideration given over the longer term to establishing a broad-based watershed restoration funding source which combines small percentages of existing multi-agency funding sources and directs allocation of interest revenue towards water quality/watershed restoration activities which address multiple program objectives. An example might be a priority TMDL water body with impaired aquatic habitat that was also ranked high by DFWP as needing fisheries habitat improvements, was a critical bull trout recovery area and had aquatic life impacts associated with abandoned mines. By leveraging funds from a broad base and ensuring interagency coordination in watersheds of mutual concern, significant cost savings could be realized, duplication of efforts avoided, and scarce restoration resources maximized.

Subcommittee/Council Recommendations:

1. EQC staff should work with DEQ to document the progress, timing, and potential requirements of the federal Clean Water Action Plan in a separate "Policy Consideration Summary", especially any relationship its requirements may have with the principles and procedures embodied in HB546 and other statutory language. The Council could continue to track Montana's participation in this process. If inappropriate federal requirements were imposed, or if advocating additional flexibility to accommodate Montana's revised program, were beneficial, Council members could coordinate to prepare appropriate correspondence (or propose a joint resolution) to support the State's position in the process. This may also be a topic for the Legislative Leadership Council on River Governance. The Subcommittee directed staff to develop wording addressing this issue as soon as possible.

Persons Coordinated with in the Development of this Summary (proposed):

Bob Raisch -- Chief, Resource Protection Planning Bureau, DEQ
*Ann Danzer -- Budget Specialist, DEQ
*Roger Lloyd -- Associate Fiscal Analyst, Legislative Fiscal Division
*Mike Volesky -- Montana Association of Conservation Districts
*Mark Simonich -- Director, DEQ
*Stuart Lehman -- DEQ

*Denotes persons from whom comments were received and incorporated.

ATTACHMENT 1

Watershed Management Section Contracts '98

Project Name	SPONSOR	Type	Contract Amount
Forestry BMP Audits	DNRC	I&E	17,700.00
Volunteer Monitoring II	MT Waterscourse	I&E	68,201.00
Teton River Watershed	Teton CD	WS	106,200.00
Sun River/Teton Ag Chemical	Teton CD	WS	75,000.00
Rosebud /E. Armell Creek	Rosebud CD	WS	68,201.00
Canyon Creek -West Billings	Yellowstone CD	GW	120,000.00
Gallatin Septics / Subdivisions	Gallatin CD	GW	36,912.00
Central Montana Big Spring Creek	Fergus CD	GW	125,000.00
Yellowstone Task Force Grant	Park CD	Gov. task force	50,000.00

Contract Type
I&E Information and Education
WS Watershed
GW Grounidwater

ATTACHMENT 2

Watershed Management Section Contracts '94-97

Project Name	SPONSOR	Type	Contract Amount
Otter Creek	Sweet Grass CD	WS	49,089.43
Big Spring Creek	Fergus Co. CD	WS	105,100.00
Big Otter Creek	Judith Basin CD	WS	70,640.00
Muddy Creek Watershed	Cascade Co. CD	WS	150,750.00
Carroll College (8837 RDGP)	Carroll College	MON	98,301.00
Elk Creek Placer Mon.	Riparian Resources	MON	59,360.00
Bullhead Implementation Phase	Pondera Co. CD	WS	69,500.00
Flaxville Aquifir	Fort Peck Tribal Council	GW	112,173.00
Stream Management Guide	MACD	I&E	40,000.00
Ruby River (RDGP 958592)	Ruby Valley CD	WS	50,000.00
Lower Missouri River CRM	McCone Co. CD	WS	10,000.00
Bitterroot Watershed Project (RDGP)	Bitterroot RC&D	WS	30,000.00
Duck Creek Stabilization	Teton Co. CD	WS	10,000.00
Teton River Watershed	Teton Co. CD	WS	15,000.00
Nevada Creek Watershed	N. Powell CD	WS	198,680.00
Careless Creek Watershed	Lower Musselshell CD	WS	104,000.00
Red River Groundwater	Glacier Co. CD	GW	188,910.00
Big Spring Creek - Phase II	Fergus Co. CD	WS	190,000.00
Lake Creek Watershed	Cascade Co. CD	WS	150,700.00
Fort Shaw Demo	Cascade Co. CD	DMO	57,424.00
NRCS - McNeil	NRCS	PSN	87,000.00
Capacity Building - MACD	MACD	I&E	45,000.00
East Spring Creek	Flathead Co. CD	WS	9,368
Mini Grants	Central Mt. RC&D	I&E	10,000
Well Abandonment Demo	Roosevelt Co. CD	DMO	23,000.00
Contracts Administrator	Lewis & Clark CD	PSN	31,667.00
Ten Mile Creek TMDL	L&C WQPD	WS	15,000.00
Animal Waste Handbook	Land & Water	I&E	44,634.00
Bitterroot Wastershed Phase II	Bitterroot CD	WS	124,185.00
North Powell County BMP'S	N. Powell CD	DMO	120,000.00
AgriMet Irrigation Water Mgmt	Broadwater Co. CD	DMO	104,664.00
Sun River Watershed	Cascade Co. CD	WS	129,260.00
Grass Filter Strips	MSU	DMO	61,740.00
Deep Creek Watershed	Broadwater CD	WS	106,600.00
Agricultural Pollution Education	Big Sandy CD/MACD	I&E	22,350.00
Riparian Area Grazing Ed Module	GALLATIN CD	I&E	70,000.00
MT Grazing Guideline Assessment	MISSOULA CD	DMO	120,000.00
Know Your Watershed	LCCD/MSU	I&E	56,370.00
Project WET	LCCD	I&E	92,917.00
Lake Water Quality & Shoreline Protection	Flathead CD	I&E	26,000.00
Deep Creek II	Broadwater CD	WS	185,000.00
Greenfield Bench Groundwater	Teton CD	GW	142,170.00
Gallatin Co. Septic Assessment	Gallatin CD		165,525.00
Sun River Watershed Phase II	Cascade Co. CD	WS	68,880.00
Sage Creek Watershed	Hill Co. CD	WS	146,800.00
Ruby Watershed Project	Ruby Valley CD	WS	115,000.00
AgriMet II	Broadwater CD	DMO	40,000.00
Big Hole Watershed	Beaverhead CD	WS	50,000
Big Otter Creek III	Judith Basin CD	WS	69,100.00
Big Otter Creek III	Judith Basin CD	WS	10,000.00
Green Mountain Watershed	Green Mountain CD	WS	38,900.00

Green Mountian Watershed	Green Mountain CD	WS	87,900.00
Teton River Project	Teton Co. CD	WS	12,000.00
Teton River Project	Teton Co. CD	WS	21,000.00
Clark Fork - Pend Oreille	Bitterroot CD	WS	32,000.00
Project WET	MSU	I&E	97,874.00
Volunteer Monitoring	NRIS	I&E	100,000.00
MT Nonpoint Source GIS	NRIS	I&E	13,000.00
Riparian Workshops	MSU	I&E	5,000.00
NRCS - Pick	NRCS	Contract staff	66,400.00

Contract Type I&E information and education WS - Watershed GW - Groundwater DMO - BMP demonstration

ATTACHMENT 3

FUNDING NON-POINT SOURCE AND TMDL ACTIVITIES

TABLE 1 - Sources of Funding

	1999 Biennium
Non-Point Source (319) Grant	2,618,611
General Funds	948,766
Total Funds	3,567,377

TABLE 2 - Allocation of Funds

	1999 Biennium
Projects	1,584,000
Monitoring/Assessment/Reporting	799,714
Watershed Management/Outreach	910,031
Permitting/Compliance	236,215
Administration	37,418
	3,567,377

1999 Biennium equals the actual FY98 expenditures plus the FY99 appropriations.

STATE OF MONTANA - FISCAL NOTE

Fiscal Note for HB0546, as introduced

DESCRIPTION OF PROPOSED LEGISLATION:
An act amending the water quality laws to further direct the Department of Environmental Quality to monitor state waters to assess their quality and to develop total maximum daily loads for those waters identified as threatened or impaired.

ASSUMPTIONS:
1. There are over 900 lakes, rivers, and streams in Montana that are threatened or not meeting water quality standards.
2. Total maximum daily loads will be developed for each of these waters over a ten year period, unless the water body is removed from the list of threatened or impaired water bodies. Since many of Montana's water bodies have not been assessed, lakes, rivers, and streams will be added to the list in the future. Development of total maximum daily loads for these water bodies will extend beyond the ten year period.
3. The DEQ will request an appropriation of $687,543 for fiscal year 1998 and $768,823 for fiscal year 1999 in HB 2 for development of total maximum daily loads. DEQ will request approval for six water quality specialists, one data management position, one administrative support position, and a project coordinator.
4. Partial funding (60%) for this program will be from federal funds transferred from the nonpoint source program funded under Section 319 of the Federal Clean Water Act (03249) which is currently being considered in HB 2. The remaining 40% will come from the state general fund.
5. If federal funding under Section 319 is not appropriated in HB 2, there will be $687,543 in FY 98 and $768,823 in FY 99 from the state general fund to support the program.

FISCAL IMPACT:

Expenditures:	FY 98 Difference	FY 99 Difference
FTE	9.00	9.00
Personal Services	$287,308	$287,308
Operating Expenses	339,235	466,515
Equipment	61,000	15,000
Total	$687,543	$768,823
Funding		
General Fund (01)	$275,017	$307,529
Federal Special Revenue (03)	412,526	461,294
Total	$687,543	$768,823

EFFECT ON COUNTY OR OTHER LOCAL REVENUES OR EXPENDITURES:
If this program is partially funded (60%) with federal funding transferred from the nonpoint source program, the amount of grant money available to local conservation districts for nonpoint source demonstration projects will be reduced.

LONG-RANGE EFFECTS OF PROPOSED LEGISLATION:
The total cost of the program will increase slowly until it reaches $925,528 in the tenth year, and then it is expected to decrease.

DAVID LEWIS, BUDGET DIRECTOR DATE
Office of Budget and Program Planning

BILL TASH, PRIMARY SPONSOR DATE

Fiscal Note for HB0546, as introduced

TMDL BUDGET BIENNIAL BUDGET

	FY98				FY99			
	Data Systems	Outreach	Sampling and Analysis	Total	Data Systems	Outreach	Sampling and Analysis	Total
FTE	3.00	2.00	4.00	9.00	3.00	2.00	4.00	9.00
Personal Services	95,253	65,739	126,316	287,308	95,253	65,739	126,316	287,308
Operating Expenses	53,664	92,319	193,252	339,235	73,664	95,319	297,532	466,515
Equipment - meters			8,000	8,000				0
hardware/software	35,000			35,000	15,000			15,000
PCs	6,000	4,000	8,000	18,000				0
Total Budget	189,917	162,058	335,568	687,543	183,917	161,058	423,848	768,823

ASSUMPTIONS

1. Sufficient credible data to support listing is not available for 15 percent or 135 of the listed water bodies.

2. About 300 water bodies will be removed from the list due to reevaluation of the listed water bodies, informal efforts to restore water quality, TMDLs performed by parties other than the department, and the approximately forty TMDLs expected to be completed by the 319 nonpoint source program.

PERSONNEL

1. One FTE (grade 16) will be needed to direct and coordinate TMDL efforts.

2. Two FTE (grades 15 and 14) will be required to support and assist local conservation district and watershed group efforts to restore water quality without using the formal TMDL process and to support public involvement.

3. Two FTE (grades 15 and 10) will be required to modify an existing data system and to enter all existing data from the US Forest Service, Fish Wildlife and Parks, etc. and to keep the system current.

4. Four FTE (grade 14) and four interns or graduate students (under contract for the thirteen-week summer field season) will perform monitoring and assessments during the summer and complete TMDLs during the rest of the year.

EQUIPMENT

Computer equipment includes personal computers ($18,000) in the first year, and data storage equipment and indexing software images so that complete reports can be stored electronically ($15,000 and $35,000 for the first and second years). Four field pH/conductivity meters will be purchased in the first year ($8,000).

TMDL BUDGET SUMMARY

	Year 1 FY98	Year 2 FY99	Year 3 FY00	Year 4 FY01	Year 5 FY02	Year 6 FY03	Year 7 FY04	Year 8 FY05	Year 9 FY06	Year 10 FY07
FTE	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Personal Services	287,308	287,308	293,054	293,054	298,915	304,894	310,991	317,211	323,555	323,555
Operating Expenses	339,235	466,515	595,006	594,546	596,218	597,925	599,114	600,327	601,973	601,973
Equipment	61,000	15,000	0	6,000	6,500	6,500	6,500	6,500	0	0
Total Budget	687,543	768,823	888,060	893,600	901,634	909,319	916,606	924,038	925,528	925,528

ASSUMPTIONS

Twenty TMDLs will be completed during the first year and forty the second year. These numbers reflect the time lost to "startup" and the learning process. During these two years the list of water bodies will be reviewed. Most of the staff efforts during the third year will be applied to reassessing the water bodies that lack sufficient credible data to support their continued listing as impaired. Thus, during the third year only ten TMDLs will be completed. For the fourth through the tenth year these personnel will be able to do about seventy-five TMDLs per year due to their experience with the process.

TMDL PROJECTS (104 b3) '98 Federal Funds

Project Name	Sponsor	Amount Requested	Amount Received
Upper Clark Fork Basin TMDL	Upper Clark Fork Steering Com.	5,000.00	5,000.00
University of Montana Watershed Clinic	UM, DEQ	10,000.00	0.00
Montana TMDL Guidance Document	DEQ - EQC - MSU	13,800.00	0.00
Montan TMDL Policy Forum	DEQ - EQC	10,000.00	0.00
Biological Monitoring and Assessment Tools	DEQ	30,000.00	0.00
Lower Missouri River CRM - TMDL	LM CRM, McCone CD	10,000.00	10,000.00
Upper Shields TMDL	Upper Shield WS Assoc, Park CD	10,000.00	10,000.00
Careless Creek TMDL	Lower Musselshell CD	20,000.00	19,000.00
Prospect Creek TMDL	Green Mt. CD	12,000.00	11,000.00
Sun River TMDL	Cascade CD	10,000.00	10,000.00
Upper Ten Mile Creek TMDL	Lewis & Clark WQD	14,000.00	0.00
Rosebud Creek TMDL	MT Bureau of Mines, Rosebud C	16,500.00	15,000.00
Total			80,000.00

Clean Water Action Plan Draft As of August 5, 1998

[illegible]	1998 Enacted	President's FY99 Budget	Increase Requested	Senate Mark	House Mark
Department of Agriculture	$439	$633	$194	$36	($0.5)
NRCS, EQIP (mandatory)	$200	$300	$100	$0	($26)
NRCS, Locally led conservation	$0	$20	$20	$0	$0
NRCS, Watershed health monitoring	$0	$3	$3	$0	$0
Forest Service, WQ on federal lands [1]	$239	$308	$69	$36	$24
ARS, Watershed health research	$0	$2	$2	$0	$1.5
Department of the Interior	$299	$358	$59	$4.5	$9
BLM, Improve WQ on federal lands	$133	$157	$24	$0	$4
Office of Surface Mining, Clean streams	$5	$7	$2	$2	$2
USGS, Water monitoring and assess	$125	$147	$22	$1	$3
F&WS, Wetlands restoration	$36	$42	$6	$0	$0
BIA, WQ on tribal lands	$0	$5	$5	$1.5	$0
Department of Commerce: NOAA	$0	$22	$22	$16	$11
Polluted runoff and toxic contaminants	$0	$13	$13	$10	$3
Harmful algal blooms	$0	$9	$9	$9	$8
Army Corps of Engineers	$106	$142	$36	$0	$4
Wetlands program	$106	$117	$11	$0	$4
Challenge 21, Floodplain restoration	$0	$25	$25	$0	$0
Environmental Protection Agency	$484	$629	$145	$115	$145
Nonpoint Source (319) Grants	$105	$200	$95	$75	$95
State Program Mgt. Grants (106)	$96	$116	$20	$10	$20
Wetlands Protection Grants	$15	$15	$0	$0	$0
Water Quality Coop. Agree. (104b3)	$20	$19	($1)	($1)	($1)

Water Quality Program Mgt.	$248	$279	$31	$31	$31
Interagency Projects	$308	$420	$112	($58)	($105)
Florida Everglades	$228	$282	$54	($33)	($90)
Interior	$136	$144	$8	($30)	($53)
Army Corps	$59	$98	$39	($4)	($19)
Other	$33	$40	$7	$1	($18)
California Bay Delta	$85	$143	$58	($20)	($10)
Everglades correction	($5)	($5)	$0	($5)	($5)
Total Clean Water Action Plan	$1,636	$2,204	$568	$113.5	$64.2

NA=no action
1. The Forest Service Budget is included in the Interior Appropriations Bill
2. NOAA is coordinating with OMB on the exact total for this line item

Clean Water Initiative Home

http://www.epa.gov/cleanwater-budget.htm
Revised August 8, 1998

Local Funding for HB546 Implementation

Background: Funds are available from a variety of programs for watershed improvement projects, but there is often hesitancy to award such funds for administrative functions that will not show direct, on-the-ground results. During the 1997 Legislative session, concern that local watershed groups were having trouble obtaining the funding necessary to carry out the organizational and administrative functions necessary to get organized on a watershed level led Conservation Districts to request an appropriation during the budgeting process. The suggestion was made to request $100,000 ($50,000 per fiscal year) be appropriated to DNRC for allocation on a request basis to local entities needing start-up funds.

Given DEQ's current reliance on existing groups to lead TMDL development, if new groups can't get started, they can't move forward on TMDLs. And, in addition to start-up funds for new groups, Conservation Districts wishing to move forward with TMDLs did not have spare funds to dedicate to the "getting started" component of TMDL development. The federal Clean Water Action Plan may have aspects that, if funded, could assist in this regard, but nothing is certain at this point (8/29/98). If funding does come through this Plan, it is also unknown at this point what conditions will be attached to applying for it. Montana's agencies are participating in the state response that appears to be required to be eligible for funding associated with the Plan.

DNRC. The appropriation request described above was granted, and the money allocated to DNRC. The attached pages describe the criteria for providing funds (maximum of $5,000 per requesting CD), and how the FY98 funds were allocated. Although many of the funded activities likely relate to water quality improvement, two specifically refer to TMDL-related activities. Approximately $14,000 of "capacity building" funds from the Montana Association of Conservation Districts (MACD) was added to the total that could be distributed in FY98.

According to DNRC staff, the funds were in high demand. As also noted in the attached, DNRC has requested increased funds for similar purposes in their current budget request. They have requested an increase of $200,000 ($100,000 per year) for these "Watershed Planning Assistance Grants" for FY99-2000. If the increase were granted, then, the total Planning Assistance funding would be $300,000 for the biennium. DNRC staff have noted that if additional funding were appropriated for this program, the grant caps (now at $5,000/District) would likely double. EQC staff are aware of no other proposed changes in the grant issuance criteria.

In addition to the Planning Assistance grants, DNRC has requested $200,000 ($100,000 per fiscal year) in additional funds under their "223" grant program (named from the House Bill that authorized the program). These funds can be used for both projects and activities, which will contribute to the ability of Conservation Districts (and local groups, if they are sponsored by a CD) to fund the administrative costs associated with watershed planning and TMDL development.

MACD staff note CD concern that the monies allocated to DNRC for CD efforts not include mandates, but allow the CDS to determine what they need, whether it's for TMDL-related efforts, or otherwise.

DEQ. In addition to the two DNRC requests for additional funding for administrative-related costs (totaling $400,000 or $200,000 per fiscal year), the DEQ issuance of "319" funds was conditioned (by the Legislature) to benefit "listed" waters. Many of these have an administrative component to them, which, although they are project-related, may involve a facilitator whose efforts would improve overall administration at the local level. It is not known whether future 319 funds will be conditioned for "listed"

waters as they were by the 1997 Legislature.

DEQ also applied to EPA for funding to provide TMDL-related assistance, each with an administrative component. They were informed they would receive $80,000 of their request, for 7 TMDL projects, each of which involve administrative components to them.

Potential Policy Issues:

- Are the current sources and proposals for administrative funds related to watershed planning and TMDL development sufficient to meet projected needs? Does the Subcommittee/Council wish to take a position on whether the budget request is a good idea? Is there sufficient coordination between DNRC and DEQ funding proposals and distribution mechanisms to create an efficient and understandable assistance mechanism to local groups? Is the CD role appropriately defined?

- There is interest on the part of CDS that agencies consult with conservation district leadership to help coordinate priorities for funding made available to local efforts through grant programs. (DEQ Director Response (to original wording): The turn-around time on (the referenced) grant prepoposal was less than a week from the time the appropriate DEQ staff received it. We did contact many of the conservation districts that we felt were in a position to accept these grants. There was insufficient time to contact all of the districts. Furthermore, this was a preproposal and the department had to gauge the amount of its effort against the chances for success. Given these sideboards, I believe we did an admirable job.)

Options Still Being Considered by the Subcommittee:

- The Subcommittee could take a position related to the DNRC funding requests and communicate that to the Legislature via this *Oversight Report*.

Subcommittee/Council Recommendations:

1. Staff should track the activities related to the federal Clean Water Action Plan, to determine if any interests the Subcommittee has in assisting with funding at the local level are appropriately addressed through that process. If they wish to influence the process they could provide comments to the Montana group, or consider proposing a Joint Resolution during the Session (if timing is appropriate).

Persons Coordinated with in the Development of this Summary (proposed):

*Mike Volesky -- Montana Association of Conservation Districts
*Gerald Mueller -- Consensus Associates
Warren Kellogg -- DNRC/NRCS
*Steve Schmitz -- Bureau Chief, Conservation Districts Bureau, DNRC
*Alan Rollo -- Watershed Consultant/Chair, Montana Watershed Coordination Council
Gary Ingman -- Bureau Chief, Monitoring, Assessment, and Data Management, DEQ
*Roger Lloyd -- Associate Fiscal Analyst, Legislative Fiscal Division
Bob Raisch -- DEQ

Krista Lee-Campbell -- Public Education Specialist, DNRC
*Mark Simonich -- Director, DEQ

*Denotes persons from whom comments were received and incorporated.

Watershed Planning Assistance Grant Information:
DNRC - Conservation Districts Bureau & MACD

The Watershed Planning Assistance Grant Program was authorized by the 1997 Montana Legislature to assist Conservation Districts with expenses associated with watershed planning.

- This grant program is available only for local watershed planning activities, meant to support existing watershed planning efforts and to help start up new ones.

- There is $50,000. available each year through this program. For SFY 1998, there will also be an additional $14,000. of Capacity Building funds available through MACD.

- Conservation Districts must be the project sponsors.

- This program is not an appropriate source of funding to do site specific design and implementation. The program was created to support pre-project planning expenses.

- Examples of watershed planning activities that could be funded under this program might include, but are not limited to, such things as:
  - collection of baseline resource information to serve as a foundation for local watershed groups to make decisions. This could include the purchase of field equipment.
  - facilitation of public meetings.
  - development of a watershed plan.
  - training to develop local watershed capacity.
  - planning and carrying out educational workshops or tours.
  - incidental costs (supplies, postage, photocopies, meeting room, etc.).

- There will a $5,000. limit per request. Additional funds may be requested if more than one conservation district is involved in the activity.

- This program is not intended to fund permanent staff. Grant monies, however, can be used for temporary staff or private consultant services provided there is a specific task or product that will result from their work.

- There are no match requirements, but identifying local contributions and other state/federal/private program involvement is important.

- Selection of projects will be based upon the importance of the activity in furthering an existing watershed planning effort or in getting a new one started.

Date: 7/21/98

FY 98 WATERSHED PLANNING ASSISTANCE GRANT STATUS

Limit on grant funds is $5000 per conservation district per application.

1. Fergus County CD $4000.00

An aerial assessment, using a helicopter, on about 200 miles of Warm Springs Creek and the upper Judith River watersheds. More assessment work is scheduled for the lower Judith River watershed this spring. This assessment is using a GPS unit that interfaces with GIS mapping and analysis.

2. Green Mountain CD $5,000

A Watershed Coordinator has been hired for the Prospect Creek Watershed who is helping form a landowner watershed group, facilitating meetings, and organizing a watershed assessment. A Know-Your-Watershed workshop has been held.

3. Lake County CD $15,000

Three CD's -- Flathead, Lake, and Lincoln -- have joined together to establish Montana Watersheds, Inc. (MWI). A MWI Executive Director has been hired to oversee the following activities: a regional watershed planning effort, a wetland mitigation project, a small acreage stewardship program, carbon offset program, GIS database compilation, and general MWI operations.

4. Mineral County CD $2,500

A UM graduate student and a watershed planner have been hired to compile resource information, then develop a watershed plan for Tamarack Creek Watershed. This stream is listed by DEQ as being impaired. The watershed plan will comply with DEQ's TMDL criteria.

5. Ruby Valley CD $5,000

A watershed planner consultant has been contracted to assist the CD in researching resource information, coordinating among the stakeholders, and developing a TMDL watershed plan that addresses impaired waterbodies in the Ruby River Watershed.

6. Park CD $5,000

The Park CD is sponsoring the Upper Shields Watershed Association which has set up committees, identified resource concerns, started work on weed mapping, and is working on identifying potential projects to be addressed in a watershed plan. Workshops and tours will be held to promote watershed planning, encourage community involvement in the watershed planning process, and to act as an information resource forum. The USWA has also conducted a stream assessment to provide information for the group to use in planning. The assessment results are being compared against an assessment done in the same area in 1982 to help identify trends.

7. Park CD $2,100

Assistance will be provided to the Governor's Yellowstone River Task Force physical features inventory project that the district is co-sponsoring. This inventory will help the Task Force complete a comprehensive watershed plan for the Upper Yellowstone River.

8. Lincoln CD $3,750

Information collected by aerial photographs and stream surveys will identify areas on Grave Creek which are in need of restoration and asses the implications of riparian recovery and natural channel design.

9. McCone CD $7,650

McCone CD has joined with Roosevelt County CD to support the Lower Missouri CRM by hiring a temporary coordinator that would assist the Lower Missouri CRM with initial resource assessments and inventories to aid in the development of a watershed plan. This resource information would also be used to prioritize sub-watersheds within the Lower Missouri CRM area. The coordinator will gather existing data pertaining to water quality in the project area, compile this information to determine what additional data is needed to form a comprehensive report, and complete any additional water quality assessments needed to complete a report that can be used to design a justifiable and responsible conservation plan to address water quality issues.

The entire $50,000 allocated for use in FY 98 was expended. We have additional grant request pending for FY99 dollars. This was the first year of the Watershed Planning Assistance Grant Program and it was met with overwhelming success and support. Due to the overwhelming number of requests received for assistance, we have requested an additional 100,000 per year for the next biennium. This would be a total of $150,000 per year or $300,000 for the 2 year period.

APPENDICES

Lower Yellowstone Watershed
USGS HUC 10100004

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT42M0011	8910	Yellowstone R	138	LOW	Swimmable Drinking Water Supply Recreation Warm Water Fishery Aquatic Life Support		137.83 137.83 137.83 137.83 137.83		Metals Nutrients Other habitat alterations Pathogens Salinity/TDS/chlorides Suspended solids pH	AGRICULTURE Irrigated Crop Production MUNICIPAL POINT SOURCES NATURAL SOURCES Range Land Streambank Modification/Destabilization
2	MT42M0021	8911	Bennie Peer Cr	6	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply Agriculture		5.63 5.63 5.63 5.63		Flow alteration Other habitat alterations Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production Range Land Streambank Modification/Destabilization
3	MT42M00210	8911	Cottonwood Cr	11	LOW	Warm Water Fishery Drinking Water Supply Agriculture	10.7 10.7 10.7			Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
4	MT42M00211	8911	Burns Cr	33	LOW	Warm Water Fishery Agriculture Drinking Water Supply	33.4 33.4 33.4			Flow alteration Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production Range Land
5	MT42M00212	8911	Morgan Cr	17	LOW	Warm Water Fishery	17.2			Suspended solids	AGRICULTURE Range Land
6	MT42M00213	8911	Glendive Cr	39	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply Agriculture		38.5 38.5 38.5 38.5		Flow alteration Other inorganics Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
7	MT42M00214	8911	Cedar Cr	38	LOW	Aquatic Life Support Warm Water Fishery Agriculture Drinking Water Supply		38.1 38.1 38.1 38.1		Other inorganics Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
8	MT42M00215	8911	Cabin Cr	53	LOW	Aqustic Life Support Agriculture Warm Water Fishery Drinking Water Supply		53.4 53.4 53.4	53.4	Nutrients Other inorganics Salinity/TDS/chlorides Siltation	AGRICULTURE NATURAL SOURCES Petroleum Activities RESOURCE EXTRACTION Range Land
9	MT42M00216	8911	Bracken Cr	11	LOW	Warm Water Fishery Agriculture Drinking Water Supply	10.8 10.8 10.8			Flow alteration Salinity/TDS/chlorides	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
10	MT42M00217	8911	Cherry Cr	41	LOW	Warm Water Fishery Agriculture Aquatic Life Support Drinking Water Supply Warm Water Fishery	41.4 41.4 41.4	41.1 41.4		Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
11	MT42M00218	9012	Sears Cr	12	LOW	Aquatic Life Support		12		Other habitat alterations	AGRICULTURE

Upper Clark Fork Watershed
USGS HUC 17010201

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT76G0011	9002	Clark Fk R	17	HIGH	Cold Water Fishery - Trout	17.4			Metals Nutrients Other habitat alterations	AGRICULTURE Channelization Mill Tailings Mine Tailings RESOURCE EXTRACTION
2	MT76G0012	9002	Clark Fk R	59	HIGH	Recreation Cold Water Fishery - Trout Aquatic Life Support Swimmable		58.7 58.7 58.7 58.7		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Siltation	AGRICULTURE Channelization Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings NATURAL SOURCES RESOURCE EXTRACTION
3	MT76G0013	9002	Clark Fk R	12	HIGH	Recreation Cold Water Fishery - Trout Aquatic Life Support Swimmable		11.8 11.8 11.8 11.8		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Suspended solids	AGRICULTURE Channelization Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings Pasture Land RESOURCE EXTRACTION
4	MT76G0014	9002	Clark Fk R	17	HIGH	Recreation Cold Water Fishery - Trout Swimmable Aquatic Life Support		17.4 17.4 17.4 17.4		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Suspended solids	AGRICULTURE INDUSTRIAL POINT SOURCES Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings Pasture Land RESOURCE EXTRACTION Streambank Modification/Destabiliz
5	MT76G0031	9002	Silver Bow Cr	1	HIGH	Recreation Drinking Water Supply Cold Water Fishery - Trout Aquatic Life Support Swimmable		1 1 1 1 1		Flow alteration Metals Nutrients Other habitat alterations	INDUSTRIAL POINT SOURCES MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings RESOURCE EXTRACTION Upstream Impoundment
6	MT76G0032	9002	Silver Bow Cr	32	HIGH	Drinking Water Supply Aquatic Life Support Cold Water Fishery - Trout Recreation Agriculture Swimmable		31.9 31.9		31.9 31.9 31.9 31.9 31.9	Metals Nutrients Organic enrichment/DO Other habitat alterations Priority organics Siltation Unionized Ammonia	MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings RESOURCE EXTRACTION Streambank Modification/Destabiliz Subsurface Mining Surface Mining Wastewater
7	MT76G0041	9012	Brock Cr	12	LOW	Cold Water Fishery - Trout		11.5			Other habitat alterations	AGRICULTURE

Teton Watershed
USGS HUC 10030205

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of Impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT41O0011	8912	Willow Cr	29	LOW	Aquatic Life Support Cold Water Fishery - Trout		28.9 28.9		Flow alteration Other habitat alterations Siltation	AGRICULTURE Irrigated Crop Production
2	MT41O00110	9009	Spring Cr	6	LOW	Aquatic Life Support Cold Water Fishery - Trout Swimmable Recreation		6.33 6.33 6.33 6.33		Flow alteration	AGRICULTURE Irrigated Crop Production
3	MT41O0012	8912	Deep Cr	7	LOW	Aquatic Life Support Cold Water Fishery - Trout		7.2 7.2		Flow alteration Other habitat alterations Siltation Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Range Land
4	MT41O0013	8912	Mcdonald Cr	10	LOW	Cold Water Fishery - Trout	10.4			Flow alteration	AGRICULTURE Irrigated Crop Productiun
5	MT41O0014	8912	Blackleaf Cr	15	LOW	Cold Water Fishery - Trout Drinking Water Supply Aquatic Life Support		15.4 15.4 15.4		Salinity/TDS/chlorides Siltation	AGRICULTURE Petroleum Activities RESOURCE EXTRACTION
6	MT41O0015	8912	Teton R, N Fk	16		Aquatic Life Support Cold Water Fishery - Trout		16.1 16.1		Flow alteration Other habitat alterations	Highway/Road/Bridge Construction NATURAL SOURCES
7	MT41O0016	8912	Teton R	93	LOW	Drinking Water Supply Agriculture Aquatic Life Support Swimmable Warm Water Fishery Recreation		93 93 93 93 93 93		Flow alteration Other habitat alterations Other inorganics Salinity/TDS/chlorides Siltation Suspended solids Thermal modifications	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Nonirrigated Crop Production Range Land Streambank Modification/Destabilization
8	MT41O0017	9001	Teton R	29	LOW	Agriculture Recreation Drinking Water Supply Cold Water Fishery - Trout Swimmable Aquatic Life Support	28.8 28.8	28.8 28.8 28.8 28.8		Flow alteration Other habitat alterations Siltation Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Nonirrigated Crop Production Range Land Streambank Modification/Destabilization
9	MT41O0018	9001	Teton R	28	LOW	Swimmable Cold Water Fishery - Trout Aquatic Life Support Recreation		28.2 28.2 28.2 28.2		Flow alteration Other habitat alterations	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
10	MT41O0019	9009	Spring Cr	3	LOW	Aquatic Life Support Recreation Swimmable Cold Water Fishery - Trout		3 3 3 3		Flow alteration Other habitat alterations	AGRICULTURE Channelization Irrigated Crop Production LAND DISPOSAL Removal of Riparian Vegetation
	MT41O0021	9403	Freezeout Lake	3500 acres	LOW	Swimmable			3500	Metals	AGRICULTURE

					Drinking Water Supply Cold Water Fishery - Trout Aquatic Life Support Agriculture		3500	3500 3500 3500	Salinity/TDS/chlorides	Irrigated Crop Production Nonirrigated Crop Production
	MT41C00022	9403	Priest Butte Lake	300 acres	LOW	Swimmable Cold Water Fishery - Trout			300 300	Metals Organic enrichment/DO Salinity/TDS/chlorides	AGRICULTURE Irrigated Crop Production Nonirrigated Crop production
	MT41O0031	9403	Bynum Reservoir	4120 acres	LOW	Aquatic Life Support Cold Water Fishery - Trout		4120 4120		Flow alteration siltation	AGRICULTURE Highway/Road/Bridge Construction Irrigated Crop Production
	MT41O0032	9403	Eureka Reservoir	400 acres	LOW	Aquatic Life Support		400		Flow alteration siltation	AGRICULTURE Highway/Road/Bridge Construction Irrigation
	MT41Q0031	9403	Benton Lake	5600 acres	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply		5600 5600 5600		Nutrients selenium salinity	AGRICULTURE

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

1998 Waterbodies In Need of Total Maximum Daily Load (TMDL) Development

WATERSHED
Teton
USGS HUC: 10030205

Number of TMDL priority segments
Low: 14 Moderate: 0 High: 0

TMDL Priority
- Low
- Medium
- High

County Boundary
Highways

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TMDL Check List - Department of Environmental Quality - 12/2/97

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Basic Components for Approval	Comments
1. *Plan is developed to meet State Water Quality Standards.*	For each TMDL, a description of the applicable standards for the waterbody of concern should be provided. There should be reasonable assurance that these standards will be attained as a result of implementing the TMDL. If uncertainty exists, a "phased" TMDL approach may be used, relying on post-implementation monitoring to determine the success of meeting water quality goals. Water quality standards may include numeric, narrative, use classification, and antidegradation components.
2. *Plan has quantified goals, targets or endpoints.*	Although a numeric water quality standard often serves as the target (e.g. 5mg/L dissolved oxygen, 200 #/100 ml fecal coliform), seldom do state water quality standards have numeric nutrient and sediment standards that are useable for nonpoint source issues. Instead, an endpoint or endpoints have to be established that address the site-specific nature of the problem. These endpoints are established as a means to judge success of the control measures in restoring water uses. There are a number of different endpoints the Region have approved as part of the TMDL review process. DEQ can provide more information on of different types of targets/endpoints that have been used as part of TMDLs in the region.
3. *Plan has quantified pollutant reduction targets.*	TMDLs need not be expressed in pounds per day or concentration when alternative means of expression are better suited to the waterbody problem. Based on EPA's TMDL regulation, TMDLs can be expressed as mass per unit of time, toxicity, or other appropriate measure. "Other appropriate measure" could include an estimate of % reduction in sediment or nutrients needed to achieve water quality standards. In developing a TMDL, it is most helpful to first visualize the solutions that will be used to address the water quality problem, and then adapt the TMDL to fit the solutions. For example, if the water quality issue is excessive sedimentation from upland conditions, then the TMDL should relate to the decrease in amount of erosion from uplands. If the issue is sedimentation related to channel conditions, then the TMDL should somehow relate to the decrease in the amount of bank erosion or perhaps the increase in stream stability. DEQ can provide examples of different types of TMDLs that have been used in the region .
4. *All significant sources of a pollutant are considered.*	The term "pollutant" is used broadly to include traditional pollutants such as metals, nutrients, BOD, and fecal coliform, but such things as sedimentation, elevated stream temperature due to poor riparian conditions, and poor flow regimes are also included. All sources or causes of the stressor must be identified or accounted for in some manner. This accounting can lump several sources of unknown origin together. The TMDL need only address the control of a subset of these sources as long as the water quality standards are expected to be met as a result of controlling those sources. For nonpoint source TMDLs, this often means that priority areas in the watershed can be identified and targeted for controls.

5. *Plan uses an appropriate level of technical analysis.*	The level of complexity of nonpoint source TMDLs can vary from site-to-site. The ultimate goal of the Clean Water Act is improvement and protection of water quality. The "correct" level of analysis is that level that will result in meeting this goal. We feel it is also important to tailor the level of analysis such that the stakeholders proceed with implementation of BMPs, resulting in attainment of water quality goals. DEQ and EPA will approve a range of approaches for TMDL development, some relying on best professional judgment and yet others relying on more sophisticated modeling.
6. *Plan considers seasonality and incorporates a margin of safety.*	The Clean Water Act requires each TMDL to be established with a margin of safety. A margin of safety can be either explicit or implicit in the analysis or assessment. For nonpoint sources, there is often high variability in the data as well as uncertainty in BMP effectiveness. Applying an explicit margin of safety (for example - some specific number of BMPs that will assure water quality standards are met) may be difficult under these circumstances. Because of the possible uncertainty involved in nonpoint source TMDLs, the margin of safety is addressed by requiring post-implementation monitoring to assure the control practices are working and the water quality endpoints are being met.
7. *Responsibilities for implementation are assigned.*	In a geographic sense, TMDLs may be allocated by individual discharger, by tributary watershed, by source, or land use category, by land parcel, or other appropriate scale or partitioning method. Allocations for nonpoint sources are often best professional estimates whereas waste load allocations for point sources are often based on a more detailed analysis. Further, the allocation of nonpoint source TMDLs can be an allocation of actual loads or it may be an allocation of responsibilities. Allocation of responsibilities can take the form of identifying what BMPs will be applied and where they will be applied in the watershed for the purpose of meeting water quality goals. It should also be noted that approvals of nonpoint source TMDLs by DEQ and EPA have acknowledged the reliance on voluntary control programs.
8. *Appropriate level of public involvement.*	States usually meet this requirement by publishing a public notice of the TMDL, asking for comments. In the case of many nonpoint source projects, there is involvement from a range of stakeholders from the beginning through the end of the project, so a public notice may contribute little to informing stakeholders and explaining what will be done. The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process.

(April 24, 1998; DRAFT)

SUFFICIENT CREDIBLE DATA FOR MAKING BENEFICIAL USE SUPPORT DETERMINATIONS

The Montana Department of Environmental Quality (DEQ) is proposing data quality objectives (DQOs) to insure that data are sufficient and credible and can be used to evaluate which waterbodies should be added to or removed from the 303(d) list. Sufficient credible data are necessary to make beneficial use support decisions. Any beneficial use support determinations that are made using data which were not collected by a DEQ sponsored entity that result in the listing or de-listing of a waterbody will be put on a priority list to be reassessed by DEQ.

EPA Guidelines

The attached tables were put together by the Intergovernmental Task Force on Monitoring Water Quality (ITFM) (1997 305(b) Report Guidelines; EPA-841-B-97-002A). The ITFM, currently in existence as the National Water Quality Monitoring Council, developed a model for stream monitoring for different types of designated uses based on the combination of biological, physical and chemical monitoring. The model defines the relationship between parameters that directly measure the condition of the biotic community. The EPA recommends that States incorporate ITFM's suite of parameters in their monitoring programs to evaluate attainment of beneficial uses. For example, ITFM recommends that the monitoring for aquatic life use support includes community level biological data, habitat, and physical/chemical field parameters in water and sediment.

Proposed Minimum Level of Information for Aquatic Life Use Support Determination

ITFM has put together tables 3-1 through 3-4 (attached) to evaluate the level of information (data quality objectives) necessary to determine if aquatic life is supported. The DEQ is proposing adoption of these tables (with modifications). The tables will be used by DEQ to establish the minimum level of information (score) required to make aquatic life use determinations for Montana waterbodies. The following scoring/evidence are considered sufficient credible data:

1) Under certain circumstances the use of only one data category (i.e., biology, habitat/physical or chemical) may be considered sufficient and credible regardless of the score. However, there must be overwhelming evidence (e.g., significant exceedences of numeric water quality standards over an extended period of time, obvious destruction of riparian habitat for the entire stream reach, etc.).

2) In most cases, for data to be considered sufficient and credible a minimum score of 6 is required for the evaluation of aquatic life use support. The score of 6 is cumulative and is the sum of the scores from the biology (table 3-1), habitat/physical (table 3-2) and chemistry (table 3-3 or 3-4) categories. The following describes the minimum score required for each category:

    A) If data are collected for all three categories the scores for each category shall be ≥ 2.

    B) If data are collected for only two of the three categories the scores for each of the categories evaluated shall be ≥ 3.

Proposed Minimum Level of Information for Other Beneficial Uses

Biological condition and physical habitat indicators will not be used to evaluate beneficial uses such as drinking water and contact recreation (e.g., swimming). One sample showing more than 125% of a human health standard will be sufficient to demonstrate impairment provided that the sample was collected using DEQ's Standard Operating Procedures (SOPs) and the analysis was performed by a laboratory using DEQ approved QA/QC protocols and analytical methods. A stream that is listed on the 303(d) list as impaired for drinking water uses will not be removed from the list unless or until there is at least quarterly sampling for three consecutive years with no more than one exceedence of human health water quality standards.

Rationale for modifications of Tables (draft)

1) **Table 3-1:** For a score of 3 "two assemblages preferred" was added to the technical component. Assemblages are defined as fish, macroinvertebrates or algae communities. **Rationale:** The DEQ intends to sample two assemblages to make a biological assessment; However, a single assemblage which includes high quality data would be accepted as a score three.

2) **Table 3-2:** For a score of 3 "Should be supplemented with photo points" was added to the technical component. **Rationale:** Habitat evaluations are often made using best professional judgement. Therefore, impairments, sampling site locations and stream reaches should be documented with photographs.

3) **Table 3-4**: For a score of 2 "< quarterly sampling of the water column and includes chemical analysis of sediment or a chlorophyll *a* analysis" was added to the column Spatial/Temporal Coverage. **Rationale:** In most cases, the water column of streams will not be sampled >quarterly for three years. However sediment chemistry (trace metals) can give additional information concerning impairment. Chlorophyll *a* is useful as an indicator of nutrients. Both sediment and chlorophyll *a* integrate impairment over an extended time period (30 days or more). Water column chemistry only indicates impairment for the period of time when the water column was sampled.

Table 3-1. Hierarchy of Bioassessment Approaches for Evaluation of Aquatic Life use Attainment Based on Resident Assemblages

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Visual observation of biota; reference conditions not used; simple documentation	Limited monitoring; extrapolations from other sites	Unknown or low precision and sensitivity; professional biologist not required	310, 320, 350, 322
2	One assemblage (usually invertebrates); reference conditions pre-established by professional biologist; biotic index or narrative evaluation of historical records	Limited to a single sampling; limited sampling for site-specific studies	Low to moderate precision and sensitivity; professional biologist may provide oversight	310, 320, 322, 350
3**	Single assemblage usually the norm; two assemblages preferred; reference condition may be site-specific, or composite of sites (e.g., regional); biotic index (interpretation may be supplemented by narrative evaluation of historical records	Monitoring of targeted sites during a single season; may be limited sampling for site-specific studies; may include limited spatial coverage for watershed-level assessments	Moderate precision and sensitivity; professional biologist performs survey or provides training for sampling; professional biologist performs assessment.	310, 315, 320, 321, 330, 331, 350
4	Generally two assemblages, but may be one if high data quality; regional (usually based on sites) reference conditions used; biotic index (single dimension or multimetric index)	Monitoring during 1-2 sampling seasons; broad coverage of sites for either site-specific or watershed assessments; conducive to regional assessments using targeted or probabilistic design	High precision and sensitivity; professional biologist performs survey and assessment	310, 315, 320, 321, 330, 331, 340, 350

NOTE: Table is based on use in lotic systems. With some modification, these approaches would apply to other waterbody types.

[a] Level of information refers to rigor of bioassessment, where 1 = lowest and 4 = highest.

[b] Refers to ability of the ecological endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

Table 3-2. Hierarchy of Habitat Assessment Approaches for Evaluation of Aquatic Life Use Attainment

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Visual observation of habitat characteristics; no true assessment; documentation of readily discernable land use characteristics that might alter habitat quality; no reference conditions	Sporadic visit; sites are mostly from road crossings or other easy access	Unknown or low precision and sensitivity; professional scientist (biologist, hydrologist) not required	365
2	Visual observation of habitat characteristics and simple assessment; use of land use maps for characterizing watershed condition; reference condition pre-established by professional scientist	Limited to annual visit and non-specific to season; generally easy access; limited spatial coverage and/or site-specific studies	Low precision and sensitivity; professional biologist or hydrologist not involved or only correspondence	370
3**	Visual-based habitat assessment using standard operating procedures (SOPs) Should be supplimented with photo points; may be supplemented with quantitative measurements of selected parameters; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment	Assessment during a single season usually the norm; spatial coverage may be limited or broad and commensurate with biological sampling; assessment may be regional or site specific	Moderate precision and sensitivity; professional biologist performs survey or provides training for sampling; professional biologist performs assessment.	375
4	Assessment of habitat based on quantitative measurements of instream parameters, channel morphology , and floodplain characteristics; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment	Assessment during 1-2 seasons; spatial coverage usually broad and commensurate with biological sampling; assessment may be regional or site-specific	High precision and sensitivity; professional biologist or hydrologist performs survey and assessment	380

NOTE: Table is based on use in lotic systems. With some modification, these approaches would apply to other waterbody types.

[a] Level of information refers to rigor of assessment, where 1 = lowest and 4 = highest.

[b] Refers to ability of the habitat endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

Table 3-3. Hierarchy of Toxicological Approaches and Levels for Evaluation of Aquatic Life Use Attainment

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Any one of the following: • Acute or chronic WET • Acute ambient • Acute sediment	1-2 WET test/yr ir 1 ambient or sediment sample tested in a segment or site	Unknown/low; minimal replication used; laboratory quality or expertise unknown	510, 520, 530, 550
2	Any of the following: • Acute or chronic ambient • Acute sediment • Acute and chronic WET for effluent-dominated system	3-4 WET test/yr or 2 ambient or sediment samples tested in segment or site at different times	Low/moderate- little replication used within a site; laboratory quality or expertise unknown or low	510, 520, 530, 540, 550
3	Any of the following: • Acute and chronic WET for effluent-dominated system • Chronic ambient or acute or chronic sediment	Monthly WET tests or total of 3 tests based on samples collected in a segment at 3 different times	Moderate/high - replication used; trained personnel and good laboratory quality	510, 520, 540, 550
4	Both of the following: • Acute and chronic ambient and • Acute or chronic sediment	≥ 4 test in total based on samples collected in a segment at 4 different times including low flow conditions	High - replication used; trained personnel and good laboratory quality	530, 540, 550

[a] Level of information refers to rigor of toxicity, where 1 = lowest and 4 = highest.

[b] Refers to ability of the toxicity testing endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

**Minimum approach proposed to be used by DEQ

Table 3-4. Hierarchy of Physical/chemical Data Levels for Evaluation of Aquatic Life Use Attainment

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[d]
1	Any one of the following: • Water quality monitoring using grab water sampling • Water data extrapolated from an upstream or downstream station where homogeneous conditions are expected • Monitoring data >5 years old without further validation • Best professional judgement based on land use data, source locations	Low spatial and temporal coverage: • Quarterly or less frequent sampling with limited period of record (e.g., 1 day) • Limited data during key periods or at high or low flows (critical hydrological regimes)	Unknown/ Low	210, 220, 230, 240, 850, 150, 130
2**	Any one of the following: • Water quality monitoring using grab water sampling • Rotating basin surveys involving multiple visits or automatic sampling • Synthesis of existing or historical information on fish contamination levels • Screening models based on loadings data (not calibrated or verified	Moderate spatial and temporal coverage: • Bimonthly or quarterly sampling during key periods (e.g., spring/summer months) • Fish spawning seasons, including limited water quality data at high and low flows • Short period of record over a period of days or multiple visits during a year or season • < Quarterly sampling of water column, however also includes Chemical analysis of sediment or a chlorophyll analysis	Low/ Moderate	210,220, 222, 230, 240, 242, 260, 810,
3	Any one of the following: • Composite or a series of grab water sampling used (diurnal coverage as appropriate) • Calibrated models (calibration data <5 years old)	Broad spatial and temporal (long-term, e.g., >3 years) coverage of site with sufficient frequency and coverage to capture acute events: • Typically, monthly sampling during key periods (e.g., spring/summer months, fish spawning seasons), multiple samples at high and low flows • Lengthy period of record (sampling over a period of months)	Moderate/ High	211, 222, 242, 250, 610
4	Any of the following: • Water quality monitoring using composite or series or grab samples (diurnal coverage as appropriate) • Limited sediment quality sampling and fish tissue analyses at sites with high probability of contamination	Broad spatial (several sites) and temporal (long-term, e.g.,>3 years) coverage of site with sufficient frequency and parametric coverage to capture acute events, chronic conditions, and all other potential P/C impacts: • Monthly sampling during key periods (e.g., spring/summer months) • Fish spawning seasons, including multiple samples at high and low flows • Continuous monitoring	High	231, 242, 250

NOTE: Physical refers to physical water parameters (e.g., temperature, pH, dissolved oxygen, turbidity, color, conductivity)

[a] Level of information refers to rigor of physical/chemical sampling and analysis, where 1 = lowest and 4 = highest.

[b] Even a short period of record can indicate a high confidence of *impairment* based on P/C data; 3 years of data are not required to demonstrate impairment. For example, a single visit to a stream with severe acid mine drainage impacts (high metals, low pH) can result in high confidence of nonsupport. However, long-term monitoring may be needed to establish full support.

[c] Refers to ability of the physical/chemical endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[d] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

(April 27, 1998; DRAFT)

Department of Environmental Quality
Monitoring and Data Management Bureau - Water Quality Section

Proposed Beneficial Use Support Decision Guidelines

Proposed beneficial use support decision guidelines are being developed by the Montana Department of Environmental Quality (DEQ) following EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports, 3-10 - 3-27). The beneficial use support decision guidelines are used after the data are determined to be sufficient and credible following proposed guidelines being developed by the (DEQ). Beneficial use support determinations are made for aquatic life use, fisheries, contact recreation and drinking water because they have the highest water quality requirements. Therefore, when these beneficial uses are determined to be fully supported all other uses (e.g., agricultural and industrial) are, by definition, fully supported as well.

Independent Application Test

Drinking water, contact recreation and fish consumption beneficial use support decisions are made using independent application. Aquatic life use support decisions are also made using independent application if only one or two data categories are used (i.e., chemical or toxicity, biological or habitat/physical). If any data category indicates impairment, using independent application, the waterbody is not fully supporting it's beneficial uses.

Aquatic Life and Fishery Beneficial Use Support

Aquatic life use support is a broad descriptor intended to protect aquatic plant and animal communities (e.g., game and non-game fish and other aquatic animals and plants) normally associated with a high quality ecosystem. To make a beneficial use support determination for aquatic life usually requires the evaluation of at least two of the following data types: 1) biology, 2) habitat/physical, or 3) chemistry or toxicity (bioassay).

Beneficial use support determinations are often made by comparing the condition of a stream to the expected reference condition. Reference condition may be determined using 1) a least-impaired stream within the same region having similar geology, hydrology and morphology; 2) historical data; 3) an upstream control or paired watershed approach; and 4) a review of existing literature.

Beneficial use determinations for aquatic life are first made using bioassay (toxicity), chemistry, biological and habitat/physical data independent of one another. If there is only sufficient credible data for one or two of the three data types (i.e., chemistry and bioassay, habitat/physical or biology) independent application is used to make beneficial use support decisions. If there is

sufficient credible data for all three of the categories, beneficial use decisions are combined using a weight of evidence analysis to produce the final determination employing the following guidelines:

Weight of Evidence Test

A) **Fully supporting**: requires no more than one (1) partially supporting use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations.

B) **Partially supporting**: requires a minimum of two (2) partially supporting aquatic life use determinations or one (1) not supporting aquatic life use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations with the remaining fully supported.

C) **Not supporting**: requires a minimum of one (1) partially supporting aquatic life use determination and one (1) not supporting aquatic life use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations.

Independent beneficial use support decisions are combined using the above weight of evidence guidelines. The weight of evidence test requires a high level of information that includes chemical, biological and habitat/physical data. At least two of the three categories (chemical or bioassay, biological and habitat) are required to indicate impairment in order to make a determination that the water body is not fully supporting aquatic life use.

Independent Application Decision Guidelines

The following provides independent application guidelines for making aquatic life, drinking water, contact recreation, and fish consumption beneficial use decisions:

I. **Aquatic Life Use Support Decision Guidelines** (Following EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports, 3-10 - 3-27). EPA guidelines were modified for Montana. Modifications are in *italics.*

1. *Bioassay* **(Toxicity)**

Fully supporting: Toxicity was not detected in either the acute or chronic tests *(bioassay).*

Partially Supporting: *Bioassay test indicates chronic toxicity.*

Not supporting: *Bioassay test indicates acute toxicity.*

2. **Chemistry/Physical** (Physical defined as temperature, suspended sediment, turbidity, etc.)

A) **Priority pollutants (metals, chlorine, and ammonia)**

Fully Supporting: *For a small data set no exceedence > 125% of acute or chronic standards for any pollutant.* If there is a large data set (minimum of quarterly sampling for 3 years): No more than 1 exceedence of acute or chronic guidelines within a 3 year period. *All sediment trace metal levels < 200% of reference.*

Partially supporting: *A beneficial use support decision cannot be partially supporting for these parameters using a small water column chemistry data set.* If there is a large data set (minimum of quarterly sampling for 3 years) for any pollutant, acute or chronic standards are exceeded more than once within a 3-year period, but in ≤ 10 percent of the samples. *Sediment trace metal levels ≥200% but ≤ 400% of reference.*

Not supporting: *Using a small data set there is an accedence > 125% of an acute or chronic standard.* If there is a large data set (minimum of quarterly sampling for 3 years) for any pollutant, an acute or chronic standard is exceeded in ≥ 10 percent of the samples within a 3-year period. *Sediment trace metal level > 400% of reference.*

B) *Nutrients,* **Dissolved Oxygen, pH, T.S., Turbidity and Temperature**

Fully supporting: *Numeric or narrative guidelines (water quality standards) are not exceeded for any pollutant or measurements are similar to reference condition.* If there is a large data set (minimum of 30 measurements with at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines are exceeded in less than 10% of measurements then the waterbody is fully supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

Partially supporting: *A partially supporting beneficial use support decision cannot be made for most of these parameters using a small data set. However, nutrient concentrations can and will be compared to reference condition (e.g., >200% and <400%; must be >5X the detection limit).* If there is a large data set (minimum of 10 measurements/year with

at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines (water quality standards) are exceeded 11 - 25% of measurements then the waterbody is partially supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

Not Supporting: *Numeric or narrative guidelines (water quality standards) are exceeded for any pollutant. Nutrients will be compared to reference condition (≥ 400%; must be > 5X the detection limit).* If there is a large data set (minimum of 10 measurements/yr with at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines are exceeded in greater than 25% of measurements, the waterbody is not supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

3. **Habitat Assessment**

Fully supporting: Data indicate that the habitat is similar to reference conditions: channel morphology; substrate composition; bank/riparian structure; and flow regime of the region. The stream has riparian vegetation of natural types. The stream has minimal short term impacts to the riparian vegetation. *DEQ Stream Reach Survey score is ≥75% of reference.*

Partially supporting: Modification of habitat slight to moderate, limited riparian zones because of encroaching land use patterns, and some evidence of watershed erosion caused by land use activities. Channel modification slight to moderate. *Flow alterations have impact on aquatic life. However, the stream can recover flow within the same season. DEQ Stream Reach Survey score is 25-75% of reference.*

Not supporting: Severe habitat alteration by channelization and dredging activities, removal of riparian vegetation, bank failure, heavy watershed erosion or alteration of the flow regime. *Flow alterations cause the stream to go dry. The stream cannot recover flow within the same season. The DEQ Stream Reach Survey score is < 25% of reference.*

4. **Biological Assessment**

Fully supporting: Data indicate functioning, sustainable biological assemblages (assemblages include fish, macroinvertebrates and algae) none of which have been modified significantly beyond the natural range of the reference condition *(>75% of reference condition). Wild fishery population is >75% of reference condition*

(Note: DEQ will work with MDFWPs to further develop fishery guidelines). The Chlorophyll a (mg/m^2) is ≤ 150% of reference condition.

Partially supporting: At least one biological assemblage (assemblages include fish, macroinvertebrates and algae) indicates moderate modification of the biological community metrics compared to reference *(25-75% of reference condition). Wild fishery population is 25-75% of reference condition (Note: DEQ will work with MDFWPs to further develop fishery guidelines. The Chlorophyll a (mg/m^2) is > 150% and ≤ 300% of reference condition.*

Not supporting: At least one assemblage indicates nonsupport (assemblages include fish, macroinvertebrates and algae). Data clearly indicate severe modification of the biological community metrics compared to reference condition *(<25% of reference condition). The stream does not support a sustainable fishery (Note: DEQ will work with MDFWPs to further develop fishery guidelines). The Chlorophyll a (mg/m^2) is > 300% of reference condition.*

II. **Drinking Water Beneficial uses (After Treatment)**

Fully supporting: No human health standard exceedences.

Not supporting: Exceedence of human health standards ≥ once in the past three (3) years.

III. **Contact Recreation (e.g., Swimming)**

Fully supporting: There are no excessive alga blooms *(blue-green algae occurring during mid/late summer that discourages swimming)*, no bathing area closures, or < 200 colonies per 100 ml fecal coliform for 90% of the samples collected in a 30-day period.

Partially supporting: Excessive alga blooms *(blue-green algae blooms occurring during mid/late summer that discourages swimming)*, turbidity, odor, etc. that restrict swimming. Beach closures. Not more than 10% of samples exceed 400 colonies per 100 ml fecal coliform during any 30-day period.

Not supporting: Lakewide bathing closures. Swimming inhibited by excessive alga blooms *(blue-green algae blooms occurring during mid/late summer that discourages swimming)* pathogens, turbidity, odor, etc.. More than 10% of samples exceed 400 colonies per 100 ml fecal coliform in a 30 day period.

IV. Fish consumption:

Fully Supporting: no restrictions or advisories in effect.

Partially Supporting: Restricted consumption advised.

Not supporting: Fish consumption is not recommended.

Note: Designated use classifications or water quality standards may need to be updated in order to make appropriate beneficial use determinations. Data collected for making water body assessments will also assist in developing updated designated use classifications or water quality standards.

(April 8, 1998; DRAFT)

Department of Environmental Quality
Monitoring and Data Management Bureau - Water Quality Section

Proposed Stream Assessment Protocols for the Montana Department of Environmental Quality (DEQ)

I. Goals

1. To collect enough information about a water body to meet the definition of sufficient and credible data. Due to limited resources, the Department is proposing to assess a stream via conducting one field visit. Therefore, a considerable amount of effort will be made during the field visit to coordinate with the Conservation Districts, land owners, etc. and to collect data that reflects water quality over time. For example, macroinvertebrate and algae community structure, habitat evaluations, sediment chemistry, and chlorophyll *a*, all may reflect both the conditions of a stream at the time of sampling and also provide a historical perspective (e.g., Macroinvertebrates can reflect water quality for up to one year prior to sampling). In addition, an attempt will be made to collect historical data (e.g., fishery data from Montana Department of Fish Wildlife & Parks (MDFWPs).

2. To make beneficial use support determinations with confidence. Data will be collected to evaluate biology (fish, macroinvertebrates or algae), chemistry (water column and sediment) and habitat characteristics (aquatic and riparian). In most cases, at least two of the three categories (biology, chemistry or habitat) will be required to show impairment in order for a water body to be considered not fully supporting beneficial uses.

II. Methods

1. Location

All sampling locations will be documented using GPS, legal description, site description and dated still photography. Each stream will be sampled near the mouth and near the headwaters. Streams will be sampled at least once every 20 miles (or at stream reach transitions locations; e.g., changes across ecoregions or land use activities). A DEQ Stream Reach Assessment Form will be filled out for each stream reach.

2. Chemistry

A) **Water column grab sample:** Analyze for pH. conductivity. dissolved oxygen, temperature, common ions, nutrients and trace metals. **Rationale:** Need water column chemistry to detect impairment (e.g., exceeds water quality standards or reference condition), and to characterize the stream (chemistry reflects hydrogeomorphology, geology, etc). Data will also be useful for stream classification purposes.

B) **Sediment composite grab samples:** Sample deposition areas (e.g., surface sediments from pools; 0-2 cm). Sieve the sediment to a uniform particle size and determine organic matter content. Analyze sample for total recoverable trace metals (nitric acid digestion) using an ICP scan (use an atomic absorption furnace for low level analysis of Se, As, and Hg). Compare results to reference condition. **Rationale:** Metals may enter the water column only when high water occurs. Metals that enter the water column from runoff will often precipitate under aerobic conditions or with a change in pH. Therefore, sediment may reflect metal availability to aquatic life over a longer time frame than does a grab sample from the water column.

3. Physical/habitat

A) **Conduct a stream reach survey:** Conduct stream survey using a DEQ Stream Reach Survey Form (DEQ SOP Manual). The form provides a scoring system. Compare the score to reference condition. Document physical impact using dated still photography. Document location of impact using GPS, legal description and site description. **Rationale:** Method documents impact to the riparian habitat, stream channel, spawning gravels, etc. and provides a numeric score that can be compared to reference condition. DEQ will also estimate discharge and document Rosgen stream class, stream order, elevation, gradient, aspect, basin area, upstream length, drainage density and primary source of water (e.g., spring) for classification purposes and developing reference condition for future reference (use maps where appropriate). **Note:** Average riffle width and depth, and percent canopy should be recorded for the site where biological samples are collected.

B) **Optional Physical/habitat Data Collection:** Conduct a pebble count, measure channel cross section, bank full discharge and discharge. Determine percent land use in the watershed via maps, aerial photographs,

etc. (e.g., percent dryland agriculture, irrigation, road density, urban, etc.). Generate a GIS map with land use coverages.

4. **Biological**

A) **Algae and Macroinvertebrates**: Collect algae and macroinvertebrate following Montana DEQ sampling methods (1995 SOP Manual). Calculate index (e.g., for calculating a macroinvertebrates index the method will include cumulative scores of metrics that will include: taxa richness, percent dominance, percent mayflies, etc.). The index will be compared to reference condition. **Rationale**: Invertebrates and algae integrate impacts to water quality over time (e.g., toxins, sediment, nutrients, habitat, etc.).

B) **Chlorophyll *a*:** Collect chlorophyll *a* samples and calculate chlorophyll *a* /square meter. Compare to reference. **Rationale**: Excessive chlorophyll *a* indicates that algae is abundant (productivity; biomass). Algae are often more abundant in water bodies that have increased nutrient loading.

C) **Fisheries:** Gather fishery information from MDFWPs reports. **Rationale**: MDFWPs fishery reports provide information concerning impacts to fishery populations and habitat.